

## CERTIFIED EQUIPMENT LIST

as of October 1, 1986

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service

Centers for Disease Control  
National Institute for Occupational Safety and Health

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DHHS (NIOSH) Publication No. 87-102

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as of

October 1, 1986

## Abstract

The National Institute for Occupational Safety and Health, under authorization of the Federal Mine Safety and Health Act of 1977 and the Occupational Safety and Health Act of 1970, provides a testing, approval, and certification program assuring commercial availability of safe personal protective devices and reliable industrial hazard measuring instruments. NIOSH develops improved performance regulations, tests and certifies (or approves) devices, and purchases approved and certified products on the open market to verify the quality of manufacture.

This publication (a) lists products certified as of October 1, 1986, (b) contains tables of useful information concerning certified coal mine dust personal sampler units and respirators, (c) updates the lists of approval applicants, and (d) lists some of the more common cautions and limitations for specific respirator classes.



# CONTENTS

|                                                                                        | Page |
|----------------------------------------------------------------------------------------|------|
| ABSTRACT.....                                                                          | iii  |
| INTRODUCTION.....                                                                      | 1    |
| I. COAL MINE DUST PERSONAL SAMPLER UNITS.....                                          | 3    |
| Certified Coal Mine Dust Personal Sampler Units.....                                   | 4    |
| Names and Addresses of Manufacturers and Distributors.....                             | 4    |
| II. RESPIRATORY PROTECTIVE DEVICES.....                                                | 5    |
| How to use the respirator tables.....                                                  | 6    |
| Abbreviations used in lists.....                                                       | 8    |
| A. Self-contained Breathing Apparatus.....                                             | A- 1 |
| 1. Entry Into and Escape.....                                                          | A- 2 |
| a. Open circuit pressure demand.....                                                   | A- 2 |
| b. Open circuit demand.....                                                            | A- 8 |
| c. Closed circuit.....                                                                 | A-11 |
| 2. Escape Only.....                                                                    | A-13 |
| a. Open circuit (pressure demand, demand or<br>continuous flow).....                   | A-14 |
| b. Closed circuit.....                                                                 | A-16 |
| 3. Combination Self-contained Breathing Apparatus and<br>Supplied-air Respirators..... | A-18 |
| B. Gas Masks.....                                                                      | B- 1 |
| 1. Ammonia.....                                                                        | B- 2 |
| 2. Chlorine.....                                                                       | B- 5 |
| 3. Sulfur Dioxide.....                                                                 | B- 8 |
| 4. Acid Gases.....                                                                     | B-10 |
| 5. Organic Vapors.....                                                                 | B-12 |
| 6. Carbon Monoxide.....                                                                | B-17 |
| 7. Pesticides.....                                                                     | B-19 |
| 8. Other gases and vapors.....                                                         | B-21 |
| C. Supplied Air Respirators.....                                                       | C- 1 |
| 1. Type C Continuous Flow.....                                                         | C- 2 |
| 2. Type C Pressure Demand.....                                                         | C-23 |
| 3. Type C Demand.....                                                                  | C-26 |
| 4. Type CE Continuous Flow Abrasive Blasting.....                                      | C-28 |
| 5. Type A.....                                                                         | C-39 |
| 6. Type B.....                                                                         | C-41 |

|                                                                                                                                  | Page  |
|----------------------------------------------------------------------------------------------------------------------------------|-------|
| D. Particulate Respirators.....                                                                                                  | D- 1  |
| 1. Single Use.....                                                                                                               | D- 2  |
| 2. Dusts and Mists.....                                                                                                          | D- 4  |
| 3. Dusts, Fumes and Mists.....                                                                                                   | D- 14 |
| 4. High Efficiency.....                                                                                                          | D- 21 |
| E. Chemical Cartridges.....                                                                                                      | E- 1  |
| 1. Ammonia.....                                                                                                                  | E- 2  |
| 2. Methyl Amine.....                                                                                                             | E- 16 |
| 3. Chlorine.....                                                                                                                 | E- 29 |
| 4. Hydrogen Chloride.....                                                                                                        | E- 55 |
| 5. Sulfur Dioxide.....                                                                                                           | E- 81 |
| 6. Organic Vapor.....                                                                                                            | E-106 |
| 7. Paints, Lacquers and Enamels.....                                                                                             | E-146 |
| 8. Pesticides.....                                                                                                               | E-157 |
| 9. Vinyl Chloride.....                                                                                                           | E-165 |
| 10. Other Gases and Vapors.....                                                                                                  | E-167 |
| F. Powered Air Purifiers.....                                                                                                    | F- 1  |
| 1. Gas Masks.....                                                                                                                | F- 2  |
| 2. Particulate.....                                                                                                              | F- 4  |
| 3. Chemical Cartridge.....                                                                                                       | F- 9  |
| G. Vinyl Chloride.....                                                                                                           | G- 1  |
| Names and Addresses of Manufacturers and Distributors .....                                                                      | 12    |
| III. APPENDICES                                                                                                                  |       |
| A. Appendix I: NIOSH Policy Statement on Approval of Air-Purifying Respirators with End-of-Service Life Indicators.....          | 16    |
| B. Appendix II: NIOSH Policy Statement on Use of Respirators for Protection Against Asbestos.....                                | 25    |
| C. Appendix III: NIOSH/MSHA Testing and Certification of Positive Pressure Closed-Circuit Self-Contained Breathing Apparatus.... | 27    |
| D. NIOSH Respirator Problem Investigation.....                                                                                   | 29    |
| E. Respirator Users' Notices.....                                                                                                | 32    |

## INTRODUCTION

The Certification Branch (CB), Division of Safety Research (DSR), National Institute for Occupational Safety and Health (NIOSH), located at 944 Chestnut Ridge Road, Morgantown, West Virginia 26505, was established to assure that certain devices and instruments used for control and evaluation of occupational hazards meet minimum performance requirements necessary to protect workers' health and safety. The functions of the CB include: (1) publish certification requirements, (2) test and certify products meeting those requirements, (3) publish lists of certified products, (4) audit manufacturers plants to determine the acceptability of their quality assurance programs, (5) sample products from the open market and test them for continued conformance to certification requirements, and (6) perform research on development of new test methods and requirements for product improvement, where necessary to assure worker protection.

This publication replaces previous lists of devices certified by NIOSH or by NIOSH and the Mine Safety and Health Administration. It does not list any devices formerly approved by the Bureau of Mines.

Certification applicants have voluntarily withdrawn certain products from the market. This withdrawal is for a variety of reasons, and replacement parts for these products may or may not be available. Other products are currently not being sold. The status of this withdrawal, the availability of parts, and sale of other products is subject to change. These products are, therefore, not listed in this publication. NIOSH advises interested persons to call (304/291-4334) or write the CB and request available information on certified products that are not listed in this publication.

Respirators are listed by approval class. General cautions and limitations are listed for each approval class. These limitations are by no means all inclusive. The respirator manufacturer may also identify further limitations or cautions for their respirators. In addition, regulatory agencies may also place a limit on the use of respirators in their standards.

Except as it purchases equipment and supplies on the open market for quality control testing, NIOSH does not have frequent internal use for personal protective equipment. It therefore welcomes information from the user concerning NIOSH certified equipment. These comments and suggestions, responses to this publication, and requests for additional information on certified products can be sent to the Chief, Certification Branch, Division of Safety Research, NIOSH, 944 Chestnut Ridge Road, Morgantown, West Virginia 26505.



## I. Coal Mine Personal Sampler Units

## COAL MINE DUST PERSONAL SAMPLER UNITS

### I. Certification of Coal Mine Dust Personal Sampler Units.

A coal mine dust personal sampler unit (CMDPSU) consists of a pump, a charger, and a sampling head with a 10 mm nylon cyclone and a preweighed sealed filter cassette. It is used--as a unit--for collecting the mandatory coal mine atmosphere samples as required under the Federal Mine Safety and Health Act of 1977. The sampling requirements are detailed in Title 30, Part 70 of the Code of Federal Regulations.

All certified CMDPSU's must have prior approval by the Mine Safety and Health Administration, Department of Labor, to meet the 2G-2239 Electrical Permissibility requirements. The performance of the CMDPSU's is certified by NIOSH under Title 30, Part 74 of the Code of Federal Regulations. As of October 1, the following CMDPSU's are certified by NIOSH:

| <u>CERTIFICATION</u> | <u>CERTIFICATE</u> |                          |
|----------------------|--------------------|--------------------------|
| <u>NUMBER</u>        | <u>HOLDER</u>      | <u>MODEL</u>             |
| TC-74-015            | MSA                | G                        |
| TC-74-028            | MSA                | G (tamperproof cassette) |

### NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

Mine Safety Appliances Company, 600 Penn Center Blvd., Pittsburgh, PA 15235

## II. RESPIRATORY PROTECTIVE DEVICES

## HOW TO USE THE RESPIRATOR TABLES

Most readers of the "NIOSH Certified Equipment List" use it to answer two basic questions about respiratory protection:

1. What is the appropriate respirator to use? and,
2. Is this respirator approved?

The Respiratory Protective Devices (Respirator) Section is divided into two series of tables to allow the user to readily find the answers to these two questions.

### Respirator Selection

The selection of an appropriate respirator for use in a given situation can only be made by carefully considering a series of interrelated environmental, equipment, work situation and human factors.

Once a selection by specific type is made, then a user can refer to the specific section for a list of all approved devices of that type. These types are:

#### A. Self-contained Breathing Apparatus

1. Entry Into and Escape
  - a. Open circuit pressure demand
  - b. Open circuit demand
  - c. Closed circuit
2. Escape Only
  - a. Open circuit (pressure demand, demand or continuous flow)
  - b. Closed circuit
3. Combination Self-contained Breathing Apparatus and Supplied-air Respirators

#### B. Gas Mask

1. Ammonia
2. Chlorine
3. Sulfur Dioxide
4. Acid Gases
5. Organic Vapors
6. Carbon Monoxide
7. Pesticides
8. Other gases and vapors

#### C. Supplied Air Respirators

1. Type C Continuous Flow
2. Type C Pressure Demand
3. Type C Demand
4. Type CE Continuous Flow Abrasive Blasting
5. Type A
6. Type B

- D. Particulate
  - 1. Single Use
  - 2. Dusts and Mists
  - 3. Dusts, Fumes and Mists
  - 4. High Efficiency
- E. Chemical Cartridges
  - 1. Ammonia
  - 2. Methyl Amine
  - 3. Chlorine
  - 4. Hydrogen Chloride
  - 5. Sulfur Dioxide
  - 6. Organic Vapor
  - 7. Paints, Lacquers and Enamels
  - 8. Pesticides
  - 9. Vinyl Chloride
  - 10. Other Gases and Vapors
- F. Powered Air Purifiers
  - 1. Gas Masks
  - 2. Particulate
  - 3. Chemical Cartridge
- G. Vinyl Chloride Respirators

For example, if your need was for a self-contained breathing apparatus for use in escaping from a laboratory fire in which the travel distance to safety was 100 feet, then your choice might be an escape self-contained breathing apparatus (SCBA) with a relatively short duration or service life. Turning to Section A(2) Escape Only Self Contained Breathing Apparatus, you would find that the TC-13F-28 approval (among others) has been granted for escape self-contained breathing apparatus (Es) with a service life of 5 minutes.

Abbreviations and Definitions of Terms and Symbols Used in Lists

Respirator Type

- A     Hose mask respirator, for entry into and escape from atmospheres not immediately dangerous to life or health, which consists of a motor-driven or hand-operated blower that permits the free entrance of air when the blower is not operating, a strong large-diameter hose having a low resistance to air flow.
- AE    Supplied-air respirator. A type A supplied air respirator equipped with additional devices designed to protect the wearer's head and neck against impact and abrasion from rebounding abrasive material, and with shielding material such as plastic, glass, woven wire, sheet metal, or other suitable material to protect the window(s) of facepieces, hoods, and helmets which do not unduly interfere with the wearer's vision and permit easy access to the external surface of such window(s) for cleaning.
- B     Supplied-air respirator. A hose mask respirator, for entry into and escape from atmospheres not immediately dangerous to life or health, which consists of a strong large diameter hose with low resistance to airflow through which the user draws inspired air by means of his lungs alone, a harness to which the hose is attached, and a tight-fitting facepiece.
- BE    Supplied-air respirator. A type B supplied-air respirator equipped with additional devices designed to protect the wearer's head and neck against impact and abrasion from rebounding abrasive material, and with shielding material such as plastic, glass, woven wire, sheet metal, or other suitable material to protect the window(s) of facepieces, hoods, and helmets which do not unduly interfere with the wearer's vision and permit easy access to the external surface of such window(s) for cleaning.
- C     Supplied-air respirators. An airline respirator, for entry into and escape from atmospheres not immediately dangerous to life or health, which consists of a source of respirable breathing air, a hose, a detachable coupling, a control valve, orifice, a demand valve or pressure demand valve, an arrangement for attaching the hose to the wearer and a facepiece, hood, or helmet.
- CE    Supplied-air respirator. A type C supplied-air respirator equipped with additional devices designed to protect the wearer's head and neck against impact and abrasion from rebounding abrasive material, and with shielding material such as plastic, glass, woven wire, sheet metal, or other suitable material to protect the window(s) of facepieces, hoods, and helmets which do not unduly interfere with the wearer's vision and permit easy access to the external surface of such window(s) for cleaning.
- CF    Continuous flow. Type C supplied air respirator which supplies respirable air at a constant flow.
- CC    Closed-circuit apparatus. An apparatus of the type in which the exhalation is rebreathed by the wearer after the carbon dioxide has been effectively removed and a suitable oxygen concentration restored from sources composed of: (i) Compressed oxygen; or (ii) Chemical oxygen; or (iii) Liquid-oxygen.



ODM Open circuit demand type - An apparatus in which the pressure inside the facepiece in relation to the immediate environment is positive during exhalation and negative during inhalation and from which exhalation is vented to the atmosphere and not rebreathed.

OPD Open circuit pressure demand type. An apparatus in which the pressure inside the facepiece in relation to the immediate environment is positive during both inhalation and exhalation and from which exhalation is vented to the atmosphere and not rebreathed.

GEN Oxygen generating respirator which supplies oxygen by means of a chemical reaction

Es Escape only respiratory devices providing protection only during escape from hazardous atmospheres.

SAR Supplied-air respirator. An airline respirator.

PAPR Powered air-purifying respirator means a device equipped with a facepiece, hood, or helmet, breathing tube, canister, cartridge, filter, canister with filter, or cartridge with filter, and a blower.

Rp Replaceable filter. A filter which is discarded after excessive resistance renders it unsuitable for further use.

Ru Reusable filter. A filter which is cleaned and reused after excessive resistance renders it unsuitable for further use.

Su Single use. A respirator that is entirely discarded after excessive resistance, sorbent exhaustion, or physical damage renders it unsuitable for further use.

AG Acid gas

OV Organic vapor

Cl Chlorine

HCl Hydrogen chloride

SO<sub>2</sub> Sulfur dioxide

CO Carbon monoxide

NH<sub>3</sub> Ammonia

MA Methyl amine

VC Vinyl chloride

ClO<sub>2</sub> Chlorine dioxide

CH<sub>2</sub>-O Formaldehyde

PH<sub>3</sub> phosphine

H<sub>2</sub>S hydrogen sulfide

PLE mists of paints, lacquer and enamel

Pest Pesticide means (1) any substance or mixture of substances (including solvents and impurities) intended to prevent, destroy, repel, or mitigate any insect, rodent, nematode, fungus, weed, or other form of plant or animal life or virus, and (2) any substance or mixture of substances (including solvents and impurities) intended for use as a plant regulator, defoliant, or desiccant, as defined in the Federal Insecticide, Fungicide, and Rodenticide Act of 1947, as amended (7 U.S.C. 135-135k), excluding fumigants which are applied as gases or vapors or in a solid or liquid form as pellets or poured liquids for subsequent release as gases or vapors.

DFM:

D Respirators, either with replaceable or reusable filters, designed as respiratory protection against dusts (1) having an air contamination level not less than 0.05 milligram per cubic meter of air; or (2) dusts having an air contamination level not less than 2 million particles per cubic foot of air.

F Respirators, with replaceable filters, designed as respiratory protection against fumes of various metals having an air contamination level not less than 0.05 milligram per cubic meter.

M Respirators, with replaceable filters, designed as respiratory protection against mists of materials having an air contamination level not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.

H Respirators, with replaceable filters, designed as respiratory protection against dusts, fumes, and mists having an air contamination level less than 0.05 milligram per cubic meter, and against radionuclides.

R Respirators, with replaceable filters, designed as respiratory protection against radon daughters, and radon daughters attached to dusts, fumes, and mists.

A Respirators, with replaceable filters, designed as respiratory protection against asbestos-containing dusts and mists.

S Single-use dust respirators designed as respiratory protection against pneumoconiosis- and fibrosis-producing dusts, or dusts and mists.

AB Abrasive blasting.

Z Respirators designed as respiratory protection against asbestos-containing dusts and mists, however, no longer permitted for use under the OSHA asbestos standard, 1910.1001.

### Service Life

|         |            |
|---------|------------|
| 3 min.  | 3 minutes  |
| 5 min.  | 5 minutes  |
| 15 min. | 15 minutes |
| 30 min. | 30 minutes |
| 45 min. | 45 minutes |
| 1 hr.   | 1 hour     |

### Breathing Gas

|   |                   |
|---|-------------------|
| A | Compressed Air    |
| O | Compressed Oxygen |

### Facepiece Type

|       |                |
|-------|----------------|
| ON    | Orinasal       |
| FF    | Full facepiece |
| HH    | Hood or helmet |
| MP(M) | Mouthpiece     |

### Regulator, valve, or canister location

|    |                              |
|----|------------------------------|
| Fm | Facepiece mounted            |
| Bm | Belt, chest, or side mounted |

### Airflow Class

|    |                                                                                               |
|----|-----------------------------------------------------------------------------------------------|
| CF | Continuous flow                                                                               |
| Dm | Demand                                                                                        |
| Pd | Pressure-demand                                                                               |
| *  | Obsolete models - these models are still approved, but no longer produced by the manufacturer |

### Hose Length and Pressure Range

These columns apply only to supplied air respirators (airline) or combination respirators with a supplied air component.

SELF-CONTAINED BREATHING APPARATUS (13F)

## A. Self-contained Breathing Apparatus

### 1. Entry Into and Escape

#### a. Open circuit pressure demand

#### Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors.

#### Limitations

Use only for temperatures above the temperature listed on approval label.

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

The air container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Demand mode shall be used only when donning apparatus.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

#### Recommendation

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.

A. Self-contained Breathing Apparatus  
 1. Entry Into and Escape  
 a. Open circuit pressure demand

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                               | Service<br>Life (min.) | Facepiece<br>Type | Regulator<br>Position |
|--------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------|-----------------------|
| 30                 | MSA                   | 95069<br>96338<br>461696<br>461704<br>463814<br>463815<br>463831<br>463833<br>466209<br>470444<br>470445<br>461946<br>461947<br>470448<br>470449 | 30                     | FF                | Bm                    |
| 40                 | Scott                 | 900014-00<br>900014-01/05/06/12/30/31/39/50/51<br>900214-00/01/05/06/50/51                                                                       | 30                     | FF                | Bm                    |
| 42                 | Scott                 | 900015-00<br>900015-01/05/06                                                                                                                     | 15                     | FF                | Bm                    |
| 45                 | USD                   | 9038-20*<br>9038-22*/70*/72*<br>9838-22/70*/72*<br>9848-20/22<br>9849-20*/22*<br>U9038-00<br>U9838-00/02<br>M9838-20*                            | 30                     | FF                | Bm                    |
| 47                 | MSA                   | 95063<br>460262<br>461697<br>461703                                                                                                              | 15                     | FF                | Bm                    |
| 59                 | Siebe-Gorman          | 014422.11                                                                                                                                        | 30                     | FF                | Fm                    |
| 65                 | Robertshaw            | 900-002-267<br>900-002-267-21*/31*                                                                                                               | 15                     | ON,FF             | Fm                    |

## SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT PRESSURE DEMAND

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                                                                                                                                                                                                             | Service<br>Life (min.) | Facepiece<br>Type | Regulator<br>Position |
|-------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------|-----------------------|
| 76                            | Scott                 | 900403-00<br>900405-00/01/02/04/10/11/12/14/20*/21*/22*/24*<br>900405-30/31/32/40/41/42/34/44/50*/51*/52*/54*<br>900409-00/01/02/04/30/31/32/34<br>900455-00/01/02/04/10/11/12/14/20/21/30/31/32/34<br>900455-40/41/42/44/50/51<br>900459-00/01/02/04/30/31/32/34<br>930401-00/01/30/31<br>930403-01/10/11/30/31/40/41<br>930451-00/01/30/31<br>930453-00/01/10/11/30/31/40/41                 | 30                     | FF                | Fm                    |
| 80                            | Scott                 | 900223-00<br>900223/01/10/11/30/31/40/41<br>900225-00/01/02/03*/04/10/11/12/13*/14/20*/<br>900225-21*/22*/23*/-30/31/32/33*/34/40/41/42/43*/44<br>900225-50*/51*/52*/53*<br>930233-00/01/10/11/30/31/41/40<br>900235-00/01/02/04/10/11/12/14/30/31/32/34<br>900235-40/41/42/44<br>900229-00/01/02/04/30/31/32/34<br>900239-00/01/02/04/30/31/32/34<br>930221-00/01/30/31<br>930231-00/01/30/31 | 30                     | FF                | Fm                    |
| 82                            | USD                   | 9045-20*<br>9045-22*<br>9845-20/22/27/28/30/31/32/33/34/35/36/37/38/39<br>9845-40/41/42/43                                                                                                                                                                                                                                                                                                     | 30                     | FF                | Bm                    |
| 99                            | Siebe-Gorman          | 014422.16                                                                                                                                                                                                                                                                                                                                                                                      | 30                     | FF                | Fm                    |
| 100                           | Draeger               | PA80 45<br>R40280<br>4050225                                                                                                                                                                                                                                                                                                                                                                   | 30                     | FF                | FM                    |
| 100                           | Draeger               | C4052013                                                                                                                                                                                                                                                                                                                                                                                       | 30                     | FF                | Bm                    |
| 102                           | ISI                   | 707.114.00<br>703.116.00                                                                                                                                                                                                                                                                                                                                                                       | 30                     | FF                | Fm                    |
| 103                           | Draeger               | PA-80-22<br>R40645                                                                                                                                                                                                                                                                                                                                                                             | 30                     | FF                | Fm                    |



## SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT PRESSURE DEMAND

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to            | Model<br>Number(s)                                                                                                                                                                                                                                 | Service<br>Life (min.) | Facepiece<br>Type | Regulator<br>Position |
|-------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------|-----------------------|
| 105                           | USD                              | 9846-20<br>9846 22                                                                                                                                                                                                                                 | 60                     | FF                | Bm                    |
| 106                           | (Bendix)<br>Clifton<br>Precision | 7010000-1/2<br>7010300-1/2/3/4<br>7010600-1/2/3/4/5                                                                                                                                                                                                | 30                     | FF                | Fm                    |
| 107                           | Globe                            | 2826-W<br>2826 WSM<br>2840-W<br>2840 WSM<br>2850-W<br>2850 WSM<br>2852 WSM<br>2926-W<br>2926 WSM<br>2940-W<br>2940 WSM<br>2950-W<br>2950 WSM<br>2952-W<br>2952 WSM<br>C2826W<br>C2840W<br>C2850W<br>C2852W<br>U2826W<br>U2840W<br>U2850W<br>U2852W | 30                     | FF                | Bm                    |
| 108                           | USD                              | 9841-00*<br>9840-25<br>9841-01*/02*/03*/20*/21*/22*/23*<br>9840-00*/01*/02*/03*/04/05/06*/07*/08/09/10*/11*/<br>12/13/14/15/16/17/18/19/20*/21*/22*/23*                                                                                            | 30 min                 | FF                | Bm                    |
| 110                           | National<br>Draeger              | PA-80<br>4052013<br>4054305                                                                                                                                                                                                                        | 60                     | FF                | Bm                    |
| 110                           | National<br>Draeger              | "C" R40280                                                                                                                                                                                                                                         | 60                     | FF                | FM                    |

## SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT PRESSURE DEMAND

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to             | Model<br>Number(s)                                                                                                                                                                   | Service<br>Life (min.) | Facepiece<br>Type | Regulator<br>Position |
|-------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------|-----------------------|
| 113                           | USD                               | 9870-00*<br>9870-01*/02*/03*/10*/11/12*/13/14/15/16/17<br>9870-20*/21*/22*/23*/30*/31*/32*/33*<br>9871-00*/01*/02*/03*/10*/11*/12*/13*/20*/21*/22*/23*<br>9871-30*/31*/32*/33*       | 60                     | FF                | Bm                    |
| 114                           | Scott                             | 900210-00<br>900210-01/02/04/30/31/32/34<br>930212-00/01/30/31                                                                                                                       | 15                     | FF                | Fm                    |
| 115                           | Scott                             | 900215-00<br>900215-01/02/04/10/11/12/14/20*/21*/30/31/32/34<br>900215-40/41/42/44/50*/51*<br>930213-00/01/10/11/30/31/40/41<br>900219-00/01/02/04/30/31/32/34<br>930211-00/01/30/31 | 15                     | FF                | Fm                    |
| 128                           | (Bendix)<br>Clifton-<br>Precision | 7010200-1*<br>7010200-2*/3*/4*<br>7010601-1/2/3/4                                                                                                                                    | 30                     | FF                | Bm                    |
| 129                           | (Bendix)<br>Clifton-<br>Precision | 7010199-1*<br>7010199-2*<br>7010602-1/2                                                                                                                                              | 60                     | FF                | Bm                    |
| 130                           | USD                               | 9842-00*<br>9842-01/02*/03/04/05/06/07                                                                                                                                               | 30                     | FF                | Bm                    |
| 132                           | Interspiro                        | 4515<br>608-301-320<br>608-311-320<br>608-321-320                                                                                                                                    | 30                     | FF                | Fm                    |
| 133                           | Interspiro                        | 4530<br>607-301-321<br>607-311-321<br>607-321-321                                                                                                                                    | 30                     | FF                | Fm                    |

## SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT PRESSURE DEMAND

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                           | Service<br>Life (min.) | Facepiece<br>Type | Regulator<br>Position |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------|-----------------------|
| 138                           | MSA                   | 473625<br>thru 473634<br>473649 thru 473658<br>481216 thru 481223                                                                                            | 30                     | FF                | Bm                    |
| 139                           | MSA                   | 473268<br>473269<br>474153<br>474158<br>481253<br>481255                                                                                                     | 30                     | FF                | Bm                    |
| 140                           | MSA                   | 470889<br>471528<br>474152<br>474155<br>481252<br>481254                                                                                                     | 60                     | FF                | Bm                    |
| 169                           | MSA                   | 476009<br>476010<br>476013<br>476014                                                                                                                         | 15                     | FF                | Fm                    |
| 171                           | Globe                 | 2826-2<br>2826-3<br>2840-2<br>2840-3<br>2850-2<br>2850-3<br>2852-2<br>2852-3<br>2926-2<br>2926-3<br>2940-2<br>2940-3<br>2950-2<br>2950-3<br>2952-2<br>2952-3 | 30                     | FF                | Bm                    |
| 174                           | National<br>Draeger   | 4050304 thru<br>4050319<br>4054277 thru 4054282                                                                                                              | 30                     | FF                | Bm                    |

## SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT PRESSURE DEMAND

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                           | Service<br>Life (min.) | Facepiece<br>Type | Regulator<br>Position |
|--------------------|-----------------------|--------------------------------------------------------------------------------------------------------------|------------------------|-------------------|-----------------------|
| TC-13F-            |                       |                                                                                                              |                        |                   |                       |
| 175                | National<br>Draeger   | 4050288 thru<br>4050303<br>4054285 thru 4054290                                                              | 45                     | FF                | Fm                    |
| 177                | National<br>Draeger   | 4050271<br>4050273<br>4050275<br>4050277<br>4050279<br>4050281<br>4050283<br>4050285<br>4054293 thru 4054300 | 60                     | FF                | Fm                    |
| 197                | Interspiro            | 607-301-322<br>607-321-322<br>607-311-322<br>607-301-222<br>607-311-222                                      | 60                     | FF                | Fm                    |
| 199                | Interspiro            | 607-301-322<br>607-311-322<br>607-321-322                                                                    |                        | FF                | Fm                    |

b. Open Circuit Demand

Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only for temperatures above the temperature listed on approval label.

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

The air container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

Recommendation

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.

A. Self-contained Breathing Apparatus

1. Entry Into and Escape

b. Open Circuit Demand

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Breathing<br>Gas | Service<br>Life | Facepiece<br>Type | Regulator<br>Position |
|-------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|-------------------|-----------------------|
| 29                            | MSA                   | 95066<br>95071<br>96363<br>457152<br>457153<br>457154<br>463827<br>463828<br>463830<br>463832<br>466208<br>466210<br>470442<br>470443<br>470446<br>470447 | A                | 30              | FF                | Bm                    |
| 39                            | Scott                 | 900000-00<br>900000-01/05/30/31/39/50/51/60/61                                                                                                            | A                | 30              | FF                | Bm                    |
| 41                            | Scott                 | 900002-00<br>900002-01/05                                                                                                                                 | A                | 15              | FF                | Bm                    |
| 43                            | Globe                 | 2540-W<br>2540-B*<br>2550-W<br>2550-B*<br>2526-W<br>2526-B*<br>2552-W,<br>2552-B*                                                                         | A                | 30              | FF                | Bm                    |
| 44                            | USD                   | 9038-00*<br>9038-02*/60*/62*<br>9838-00/02/60*/62*                                                                                                        | A                | 30              | FF                | Bm                    |
| 46                            | MSA                   | 95061<br>95068<br>457150<br>457151                                                                                                                        | A                | 15              | FF                | Bm                    |

## SCBA ENTRY INTO AND ESCAPE OPEN CIRCUIT DEMAND

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to | Model<br>Number(s)                                                                                                             | Breathing<br>Gas | Service<br>Life | Facepiece<br>Type | Regulator<br>Position |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|-------------------|-----------------------|
| 58                            | Siebe-Gorman          | 014422.10                                                                                                                      | A                | 30              | FF                | Fm                    |
| 73                            | Scott                 | 900400-00<br>900400-01/02/04/30/31/32/34<br>900450-00/01/02/04/30/31/32/34<br>930402-00/01/30/31<br>930452-00/01/30/31         | A                | 30              | FF                | Fm                    |
| 79                            | Scott                 | 900220-00<br>900220-01/02/03*/04/30/31/32/33*/34<br>930222-00/01/30/31<br>900230-00/01/02/04/30/31/32/34<br>930232-00/01/30/31 | A                | 30              | FF                | Fm                    |
| 142                           | MSA                   | 473615<br>thru 473624<br>453639 thru 473648                                                                                    | A                | 30              | FF                | Bm                    |
| 168                           | MSA                   | 476007<br>476008<br>476011<br>476012                                                                                           | A                | 15              | FF                | Fm                    |

c. Closed circuit

Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only for temperatures above the temperature listed on approval label.

If compressed air supply is used: Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

If compressed oxygen or liquid oxygen supply is used: Approved for use only when the cylinder or container is charged with compressed oxygen or liquid oxygen meeting U.S.P. specifications.

If liquefied breathing air is used it must meet Type II-Grade B of higher quality.

The oxygen container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

Recommendation for Closed Circuit with Breathing Gas Cylinders

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.



A. Self-contained Breathing Apparatus

1. Entry Into and Escape

c. Closed circuit

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                  | Breathing<br>Gas | Service<br>Life | Facepiece<br>Type | Regulator<br>Position |
|--------------------|-----------------------|-------------------------------------|------------------|-----------------|-------------------|-----------------------|
| TC-13F-            |                       |                                     |                  |                 |                   |                       |
| 27                 | Biomarine             | Biopack 45<br>45-600*<br>45-100     | 0                | 45              | FF                | Bm                    |
| 32                 | Siebe-Gorman          | 013831.04<br>013831.05<br>013831.07 | 0                | 3 hr.           | FF                | Bm                    |
| 38                 | Draeger               | BG-174A-3h<br>(R22900)              | 0                | 3 hr.           | FF                | Bm                    |
| 57                 | Draeger               | BG-174-4h<br>(R27081)               | 0                | 4 hr.           | FF                | Bm                    |
| 60                 | Scott                 | 900050-00<br>900050-01/02/03/04/05  | 0                | 4 hr.           | FF                | In back<br>pack       |
| 84                 | Rexnord               | BioPak 30                           | 0                | 30              | FF                | Bm                    |
| 85                 | Rexnord               | BioPak 60                           | 0                | 60              | FF                | Bm                    |
| 176                | Draeger               | BG-174AP-2h<br>(R32200)             | 0                | 2 hr.           | FF                | Bm                    |
| 185                | Rexnord               | Biopak 240                          | 0                | 4 hrs.          | FF                | Bm                    |
| 186                | MSA                   | 472973                              | 0                | 4 hrs.          | FF                | Bm                    |

## 2. Escape Only

- a. Open circuit (pressure demand, demand or continuous flow)

### Approval

Approved for respiratory protection during escape from oxygen deficient atmospheres, gases and vapors.

### Limitations

Use only for temperatures above the temperature listed on approval label.

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

The air container shall meet applicable DOT specifications.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

OSHA regulations require that escape respirators be inspected monthly.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

### Recommendation

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.

A. Self-contained Breathing Apparatus

2. Escape Only

a. Open circuit (pressure demand, demand or continuous flow)

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                   | Service<br>Life (min.) | Facepiece<br>Type | Respirator<br>Type |
|--------------------|-----------------------|----------------------------------------------------------------------|------------------------|-------------------|--------------------|
| TC-13F-            |                       |                                                                      |                        |                   |                    |
| 28                 | Robertshaw            | 900-002-268-01<br>900-002-268-02<br>900-002-268-11<br>900-002-268-12 | 5                      | HH                | CF, Es             |
| 28A                | Lear Siegler          | 5500                                                                 | 5                      | HH                | CF, Es             |
| 35                 | USD                   | 9065-03<br>9865-03*                                                  | 15                     | FF                | ODM, Es            |
| 36                 | USD                   | 9069-02/11<br>9869-02/11                                             | 5                      | FF                | ODM, Es            |
| 52                 | MSA                   | 457156<br>456040                                                     | 5                      | FF                | ODM, Es            |
| 55                 | MSA                   | 76753                                                                | 5                      | MP                | ODM, Es            |
| 61                 | MSA                   | 456989                                                               | 5                      | ON                | ODM, Es            |
| 66                 | Scott                 | 900055-01<br>900055/02/03/04/21/30/31/36/40/41/54/55                 | 5                      | ON,FF             | ODM, Es            |
| 71                 | Globe                 | 2508                                                                 | 5                      | FF                | ODM, Es            |
| 75                 | Globe                 | 2503                                                                 | 15                     | FF                | ODM, Es            |
| 83                 | MSA                   | 465251                                                               | 5                      | ON                | ODM, Es            |
| 86                 | USD                   | 0028-00/-03                                                          | 5                      | HH                | CF, Es             |
| 111                | ISI                   | (ELSA)<br>070.117.00                                                 | 5                      | HH                | CF, Es             |

## SCBA ESCAPE ONLY OPEN CIRCUIT

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to | Model<br>Number(s)                                                    | Service<br>Life (min.) | Facepiece<br>Type | Respirator<br>Type |
|-------------------------------|-----------------------|-----------------------------------------------------------------------|------------------------|-------------------|--------------------|
| 116                           | Scott                 | 900055-42/43<br>900055-56/57                                          | 5                      | FF                | OPD, Es            |
| 124                           | Scott                 | 900555-01<br>900555-02/03/04                                          | 5 min                  | FF                | OPD, Es            |
| 125                           | Scott                 | 900550-01<br>900550-02/03/04                                          | 5 min                  | FF                | OPD, Es            |
| 143                           | MSA                   | 474944<br>thru 474961                                                 | 5                      | FF                | OPD, Es            |
| 145                           | ISI                   | 707.117.02                                                            | 10                     | HH                | CF, Es             |
| 166                           | Globe                 | 2808<br>2908                                                          | 5                      | FF                | OPD, Es            |
| 167                           | Globe                 | 2803<br>2903                                                          | 15                     | FF                | OPD, Es            |
| 172                           | North                 | 845                                                                   | 5                      | HH                | CF, Es             |
| 173                           | ISI                   | 707.117.08                                                            | 5                      | HH                | CF, Es             |
| 178                           | Resp. Systems         | (L510) 100100-1<br>100100-11<br>(R410) 100100-21<br>(R410A) 100100-31 | 5                      | HH                | CF, Es             |
| 179                           | Resp. Systems         | (L505) 100500-1<br>100500-11<br>(R405) 100500-21<br>(R405A) 100500-31 | 10                     | HH                | CF, Es             |

## SCBA ESCAPE ONLY OPEN CIRCUIT

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to  | Model<br>Number(s)               | Service<br>Life (min.) | Facepiece<br>Type | Respirator<br>Type |
|-------------------------------|------------------------|----------------------------------|------------------------|-------------------|--------------------|
| 181                           | Scott                  | 900105-01                        | 5                      | HH                | CF, Es             |
| 182                           | Nat. Draeger           | 4052143<br>4052226               | 5                      | HH                | CF, Es             |
| 193                           | Respiratory<br>Systems | 100720-1<br>100720-11<br>(L-560) | 5                      | HH                | CF, Es             |
| 195                           | North                  | 850                              | 10                     | HH                | CF, Es             |
| 198                           | North                  | 855                              | 5                      | HH                | CF, Es             |
| 200                           | National<br>Draeger    | 4052192<br>4052204               | 10                     | HH                | CF, Es             |
| 201                           | ISI                    | 707.117.10                       | 5                      | HH                | CF, Es             |
| 202                           | Airolife               | 550                              | 10                     | HH                | CF, Es             |
| 203                           | Airolife               | 500                              | 5                      | HH                | CF, Es             |
| 204                           | Airolife               | 600                              | 10                     | HH                | CF, Es             |

b. Closed circuit

Approval

Approved for respiratory protection during escape from oxygen deficient atmospheres, gases and vapors.

Limitations

Use only for temperatures above the temperature listed on approval label.

If compressed air supply is used: Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

If liquefied breathing air is used it must meet Type II - Grade B or higher quality.

If compressed oxygen or liquid oxygen supply is used: Approved for use only when the cylinder is charged with compressed oxygen or liquid oxygen meeting U.S.P. specifications.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

OSHA regulations require that escape respirators be inspected monthly.

MSHA regulations require that self-rescuers that are carried be inspected daily.

Cylinder must meet applicable DOT specifications.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

Recommendation for Closed Circuit with Breathing Gas Cylinders

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.

SCBA ESCAPE ONLY CLOSED CIRCUIT

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to | Model<br>Number(s) | Service<br>Life (min.) | Facepiece<br>Type |
|-------------------------------|-----------------------|--------------------|------------------------|-------------------|
| 77                            | MSA                   | 304330             | 10<br>1 hour           | MP                |
| 78                            | MSA                   | 464213             | 1 hr.                  | MP                |
| 87                            | Draeger               | OXY-SR60B(R31230)  | 60                     | MP                |
| 88                            | Scott                 | 802300-01/02       | 15                     | HH                |
| 97                            | PASS                  | 700*               | 60                     | MP                |
| 101                           | CSE                   | AU-9A1             | 60                     | MP                |
| 104                           | Ocenco                | (EBA 6.5)<br>14000 | 60                     | MP                |
| 109                           | PASS                  | 720*               | 60                     | FF                |
| 117                           | USD                   | 9039-00<br>9040-00 | 60                     | FF                |
| 170                           | Romiro                | 150                | 15                     | MP                |
| 180                           | MSA                   | 1118-705/SSR90     | 60                     | MP                |

3. Combination Self-contained Breathing Apparatus and Supplied-air Respirators (Demand and Pressure Demand)

Approval

Approved for respiratory protection during entry into or escape from oxygen deficient atmospheres, gases and vapors, when using air-line air supply. Approved for escape only, when using self-contained air supply. If service life is 15 minutes or longer then not more than 20% of the rated capacity of air supply can be used on entry.

Limitations

Use only for temperatures above the temperature listed on approval label.

Approved only when compressed air reservoir is fully charged with air meeting the requirements of the Compressed Gas Association Specification G-7.1 for Type 1, Grade D air, or equivalent specifications.

The air container shall meet applicable DOT specifications.

Use adequate skin protection when worn in gases or vapors that poison by skin absorption.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Use only the hose lengths and pressure ranges specified on the approval label.

If the supplied air fails open cylinder valve and proceed to fresh air immediately.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

Recommendation

NIOSH recommends that SCBA be inspected weekly if stored and immediately before use if used regularly, for breathing gas pressure.



A. Self-contained Breathing Apparatus

3. Combination SCBA and SAR (Demand and Pressure Demand)

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to  | Model<br>Number(s)                                | Service<br>Life<br>of SCBA | Face-<br>piece<br>Type | Supplied Air<br>Respirator<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi. |
|-------------------------------|------------------------|---------------------------------------------------|----------------------------|------------------------|------------------------------------|------------------------|---------------------------|
| 33                            | USD                    | 9081-14<br>9881-14                                | 5                          | FF                     | Es,ODM,SAR                         | 4-250                  | 50-125                    |
| 34                            | USD                    | 9081-12<br>9881-12                                | 5                          | FF                     | Es,ODM,SAR                         | 4-250                  | 50-125                    |
| 48                            | Scott                  | 900006-00<br>900006-02/08/10/11/20/21/22/23/24/25 | 3 or 5                     | FF                     | Es,ODM,SAR                         | 25-300                 | 350-450                   |
| 49                            | Scott                  | 900007-00<br>900007-02/08/10/11/20/21/22/23/24/25 | 3 or 5                     | FF                     | Es,OPD,SAR                         | 25-300                 | 350-450                   |
| 53                            | USD                    | 9081-13<br>9881-13/17/32/33/34                    | 5                          | FF                     | Es,OPD,SAR                         | 4-250                  | 50-125                    |
| 54                            | USD                    | 9081-15<br>9881-15<br>9881-19                     | 5                          | FF                     | Es,OPD,SAR                         | 4-250                  | 50-125                    |
| 56                            | MSA                    | 96395<br>455938<br>455993<br>455994               | 10                         | FF                     | Es,OPD,SAR                         | 25-300                 | 75-90                     |
| 56A                           | MSA                    | 304213<br>304194                                  | 10                         | FF                     | Es,OPD,SAR                         | 25-300                 | 75-90                     |
| 62                            | MSA                    | 458178<br>458479                                  | 5                          | FF                     | Es,ODM,SAR                         | 25-300                 | 50-90                     |
| 63                            | Robertshaw<br>Controls | 900-002-267-01*/-11*                              | 15                         | ON,FF                  | Es,OPD,SAR                         | 25-250                 | 50-125                    |
| 64                            | Robertshaw<br>Controls | 900-002-266-01/02/03/04/11/12/13/14               | 5                          | ON,FF                  | Es,OPD,SAR                         | 25-250                 | 50-125                    |

## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                                                                                                                                                                                                           | Service<br>Life<br>of SCBA | Face-<br>piece<br>Type | Supplied Air<br>Respirator<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi. |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------|------------------------------------|------------------------|---------------------------|
| 67                            | Scott                 | 900055-09<br>900055-10/17/18/05/06/32/33/58/59/50/51                                                                                                                                                                                                                                                                                                                                         | 5                          | ON,FF                  | Es,ODM,SAR                         | 10-250                 | 60-125                    |
| 68                            | Scott                 | 900055-13<br>900055-14/22/23/24/25/60/61/52/53                                                                                                                                                                                                                                                                                                                                               | 5                          | FF                     | Es,OPD,SAR                         | 10-250                 | 60-125                    |
| 69                            | MSA                   | 457159<br>456039                                                                                                                                                                                                                                                                                                                                                                             | 5                          | FF                     | Es,ODM,SAR                         | 25-300                 | 50-100                    |
| 70                            | MSA                   | 460713<br>461698<br>466556                                                                                                                                                                                                                                                                                                                                                                   | 5                          | FF                     | Es,OPD,SAR                         | 25-300                 | 50-100                    |
| 72                            | Globe                 | 2509                                                                                                                                                                                                                                                                                                                                                                                         | 5                          | FF                     | Es,ODM,SAR                         | 25-100                 | 50-70                     |
| 74                            | Globe                 | 2505<br>2505-4                                                                                                                                                                                                                                                                                                                                                                               | 15                         | FF                     | Es,ODM,SAR                         | 25-100                 | 50-70                     |
| 76                            | Scott                 | 900403-00<br>930403-01/10/11/30/31/40/41<br>900405-00/01/02/04/10/11/12/14/20*/21*/22*/24*<br>900405-30/31/32/40/41/42/34/44/50*/51*/52*/54*<br>930453-00/01/10/11/30/31/40/41<br>900455-00/01/02/04/10/11/12/14/20/21/30/31/32/34<br>900455-40/41/42/44/50/51<br>900409-60/-61/-62/-64<br>900459-60/-61/-62/-64<br>900401-60/-61<br>930451-60/-61<br>900469-60/-61/-62/-64<br>900461-60/-61 | 30                         | FF                     | OPD,SAR                            | 0-300                  | 60-115                    |
| 79                            | Scott                 | 900220-00<br>900220-01/02/03*/04/30/31/32/33*/34<br>930222-00/01/30/31<br>900230-00/01/02/04/30/31/32/34<br>930232-00/01/30/31                                                                                                                                                                                                                                                               | 30                         | FF                     | ODM,SAR                            | 0-300                  | 60-115                    |

## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

| Approval<br>Number | Approval  | Model                                                                                                                                                                                                                                           | Service | Face- | Supplied Air | Hose   | Pressure |
|--------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|--------------|--------|----------|
| TC-13F-            | Issued to | Number(s)                                                                                                                                                                                                                                       | Life    | piece | Respirator   | Length | Range    |
|                    |           |                                                                                                                                                                                                                                                 | of SCBA | Type  | Type         | feet   | psi.     |
| 80                 | Scott     | 900223-00<br>900223/01/10/11/30/31/40/41<br>900225-00/01/02/03*/04/10/11/12/13*/14/20*/21*/22*-23*<br>900225-30/31/32/33*/34/40/41/42/43*/44/50*/51*/52*/53*<br>930233-00/01/10/11/30/31/41/40<br>900235-00/01/02/04/11/12/14/30/31/32/34/41/42 | 30      | FF    | OPD, SAR     | 0-300  | 60-115   |
| 89                 | MSA       | 465182<br>465183<br>465185<br>465186<br>465199<br>465200<br>465202<br>465203<br>470450<br>470451<br>470454<br>470455                                                                                                                            | 30      | FF    | ODM, SAR     | 25-300 | 50-100   |
| 90                 | MSA       | 465188<br>470453<br>465189<br>465191<br>465192<br>465205<br>465206<br>465208<br>465209<br>470456<br>470452<br>470457                                                                                                                            | 30      | FF    | OPD, SAR     | 25-300 | 50-100   |
| 91                 | MSA       | 465184<br>465187<br>465201<br>465204                                                                                                                                                                                                            | 15      | FF    | ODM, SAR     | 25-300 | 50-100   |
| 92                 | MSA       | 465190<br>465193<br>465207<br>465210                                                                                                                                                                                                            | 15      | FF    | OPD, SAR     | 25-300 | 50-100   |

## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                     | Service<br>Life<br>of SCBA | Face-<br>piece<br>Type | Supplied Air<br>Respirator<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi. |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------|------------------------------------|------------------------|---------------------------|
| 93                            | MSA                   | 464775<br>464777<br>472676<br>472684<br>472677<br>472685                                                                                                                                               | 30                         | FF                     | OPD, SAR                           | 25-300                 | 50-100                    |
| 94                            | MSA                   | 464776<br>464778                                                                                                                                                                                       | 15                         | FF                     | OPD, SAR                           | 25-300                 | 50-100                    |
| 95                            | Scott                 | 900460-00<br>900460-01/02/04/30/31/32/34<br>930462-00/01/30/31                                                                                                                                         | 60                         | FF                     | ODM, SAR                           | 0-300                  | 60-115                    |
| 96                            | Scott                 | 900463-00<br>900463-01/10/11/30/31/40/41<br>900465-00/01/02/04/10/11/12/14/20*/21*/30/31/32/34<br>900465-40/41/42/44/50*/51*<br>900469-00/01/02/04/30/31/32/34/60/61/62/64<br>930461-00/01/30/31/60/61 | 60                         | FF                     | OPD, SAR                           | 0-300                  | 60-115                    |
| 98                            | Scott                 | 900228-00*/<br>900228-01*                                                                                                                                                                              | 15                         | FF                     | OPD, SAR                           | 25-300                 | 450-550                   |
| 112                           | Scott                 | 900480-01                                                                                                                                                                                              | 5                          | FF                     | CF, Es, SAR                        | 15-250                 | 10-15                     |
| 114                           | Scott                 | 900210-00<br>900210-01/02/04/30/31/32/34<br>930212-00/01/30/31                                                                                                                                         | 15                         | FF                     | OPM, SAR                           | 0-300                  | 60-115                    |
| 115                           | Scott                 | 900215-00<br>900215-01/02/04/10/11/12/14/20*/21*/30/31/32/34<br>900215-40/41/42/44/50*/51*<br>930213-00/01/10/11/30/31/40/41                                                                           | 15                         | FF                     | OPD, SAR                           | 0-300                  | 60-115                    |
| 118                           | National<br>Draeger   | 4059192 thru<br>4059199<br>4054313 thru 405318<br>4050443                                                                                                                                              | 30 min<br>(2216 psig)      | FF                     | OPD, SAR                           | 25-300                 | 85-120                    |

## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                   | Service<br>Life<br>of SCBA | Face-<br>piece<br>Type | Supplied Air<br>Respirator<br>Type                                           | Hose<br>Length<br>feet | Pressure<br>Range<br>psi. |
|--------------------|-----------------------|------------------------------------------------------|----------------------------|------------------------|------------------------------------------------------------------------------|------------------------|---------------------------|
| TC-13F-            |                       |                                                      |                            |                        |                                                                              |                        |                           |
| 119                | National<br>Draeger   | 4059200 thru<br>4059207<br>4054319 thru<br>4050441   | 30<br>(4500 psig)          | FF                     | OPD,SAR                                                                      | 25-300                 | 85-120                    |
| 120                | National<br>Draeger   | 4059184 thru<br>4059191<br>4054307 thru<br>4050442   | 15<br>(4500 psig)          | FF                     | OPD,Es,SAR                                                                   | 25-300                 | 85-120                    |
| 121                | Globe                 | 2809<br>2809-4<br>C2809<br>C2809-4<br>2909<br>2909-4 | 5                          | FF                     | OPD,Es,SAR<br>w/series 3000 fittings<br><br>25-100<br>w/series 6000 fittings | 25-250                 | 60-75                     |
| 122                | Globe                 | 2805<br>2805-4<br>C2805<br>C2805-4<br>2905<br>2905-4 | 15                         | FF                     | OPD,Es,SAR<br>w/series 3000 fittings<br><br>25-100<br>w/series 6000 fittings | 25-250                 | 60-75                     |

## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

| Approval<br>Number | Approval<br>Issued to             | Model<br>Number(s)                                                       | Service<br>Life<br>of SCBA | Face-<br>piece<br>Type | Supplied Air<br>Respirator<br>Type | Hose<br>Length<br>feet                     | Pressure<br>Range<br>psi.                                          |
|--------------------|-----------------------------------|--------------------------------------------------------------------------|----------------------------|------------------------|------------------------------------|--------------------------------------------|--------------------------------------------------------------------|
| 123                | MSA                               | 470199<br>470740<br>471955 thru 471962<br>471989 thru 471996             | 5 min                      | FF                     | OPD, Es, SAR                       | 25-300                                     | 65-85                                                              |
| 126                | Scott                             | 900565-01<br>900565-02/03/04                                             | 5 min                      | FF                     | OPD, Es, SAR                       | 0-300                                      | 60-105                                                             |
| 127                | Scott                             | 900560-01<br>900560-02/03/04                                             | 5 min                      | FF                     | OPD, Es, SAR                       | 0-300                                      | 60-105                                                             |
| 131                | USD                               | 9882-00<br>9882-01/02/03/10/11/12/13                                     | 30                         | FF                     | OPD, SAR                           | 25<br>50<br>75<br>100<br>150<br>200<br>250 | 35-125<br>38-125<br>40-125<br>45-125<br>55-125<br>60-125<br>75-125 |
| 132                | Interspiro                        | 608-301-220<br>608-311-220<br>608-301-320<br>608-311-320<br>608-321-320  | 30                         | FF                     | OPD, SAR                           | 25-300                                     | 60-125                                                             |
| 133                | Interspiro                        | 607-301-121<br>607-311-121<br>607-301-321<br>607-311-321<br>607-321-321  | 30                         | FF                     | OPD, SAR                           | 25-300                                     | 60-125                                                             |
| 134                | AGA                               | 915                                                                      | 5                          | FF                     | OPD, Es, SAR                       | 25-250                                     | 60-125                                                             |
| 135                | (Bendix)<br>Clifton-<br>Precision | 7010420-1*<br>7010420- 2*/3*/4*/5*/6*/7*/8*<br>7010612-1 thru 7010612-16 | 30                         | FF                     | OPD, SAR                           | 25-300                                     | 100-125                                                            |

## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to             | Model<br>Number(s)                                                      | Service<br>Life<br>of SCBA | Face-<br>piece<br>Type | Supplied Air<br>Respirator<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi. |
|-------------------------------|-----------------------------------|-------------------------------------------------------------------------|----------------------------|------------------------|------------------------------------|------------------------|---------------------------|
| 136                           | (Bendix)<br>Clifton-<br>Precision | 7010421-1*<br>7010421-2*/3*/4*/5*/6*/7*/8*<br>7010611-1 thru 7010611-16 | 30                         | FF                     | OPD,SAR                            | 25-300                 | 100-125                   |
| 137                           | (Bendix)<br>Clifton<br>Precision  | 7010422-1*<br>7010422-2*/3*/4*<br>7010612-1 thru 7010612-8              | 60                         | FF                     | OPD,SAR                            | 25-300                 | 100-125                   |
| 141                           | National<br>Draeger               | 4059276 thru<br>4059279<br>4054337 thru 40544340                        | 5                          | FF                     | OPD,Es,SAR                         | 25-300                 | 85-120                    |
| 144                           | North                             | 802,805<br>808, 811                                                     | 60                         | FF                     | OPD,SAR                            | 12.5-300               | 78-82                     |
| 146                           | North                             | 803, 806<br>809, 812<br>813, 814<br>815, 816                            | 30                         | FF                     | OPD,SAR                            | 12.5-300               | 78-82                     |
| 147                           | North                             | 801, 804<br>807, 810                                                    | 30                         | FF                     | OPD,SAR                            | 12.5-300               | 78-82                     |
| 148                           | MSA                               | 474204 thru 474211<br>474234 thru 474241                                | 30                         | FF                     | ODM,SAR                            | 15-300                 | 85-90                     |
| 149                           | MSA                               | 475898<br>475899<br>474864<br>475865                                    | 15                         | FF                     | ODM,SAR                            | 15-300                 | 85-90                     |

## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                               | Service<br>Life<br>of SCBA | Face-<br>piece<br>Type | Supplied Air<br>Respirator<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi. |
|--------------------|-----------------------|--------------------------------------------------------------------------------------------------|----------------------------|------------------------|------------------------------------|------------------------|---------------------------|
| 150                | MSA                   | 474188<br>474189<br>474192<br>474193<br>474218<br>474219<br>474222<br>474223<br>481245<br>481249 | 60                         | FF                     | ODM, SAR                           | 15-300                 | 85-90                     |
| 151                | MSA                   | 474187<br>474191<br>474217<br>474221<br>481244<br>481248                                         | 30                         | FF                     | ODM, SAR                           | 15-300                 | 85-90                     |
| 152                | MSA                   | 475956<br>475957<br>475960<br>475961<br>475975<br>475976<br>475979<br>475980                     | 60                         | FF                     | ODM, SAR                           | 15-300                 | 85-90                     |
| 153                | MSA                   | 475995<br>475974<br>475978<br>475959                                                             | 30                         | FF                     | ODM, SAR                           | 15-300                 | 85-90                     |



## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                               | Service<br>Life<br>of SCBA | Face-<br>piece<br>Type | Supplied Air<br>Respirator<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi. |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------|------------------------------------|------------------------|---------------------------|
| TC-13F             |                       |                                                                                                                                  |                            |                        |                                    |                        |                           |
| 154                | MSA                   | 474212 thru 474215<br>474242 thru 474245<br>475822 thru 475825<br>475884 thru 475887<br>481224 thru 481227<br>481234 thru 481237 | 30                         | FF                     | OPD, SAR                           | 15-300                 | 85-90                     |
| 155                | MSA                   | 475900<br>475901<br>475866<br>475867<br>481228<br>481238                                                                         | 15                         | FF                     | OPD, SAR                           | 15-300                 | 85-90                     |
| 156                | MSA                   | 474196 thru 474203<br>474226 thru 474233                                                                                         | 30                         | FF                     | ODM, SAR                           | 15-300                 | 85-90                     |
| 157                | MSA                   | 475896<br>475897<br>475862<br>475863                                                                                             | 15                         | FF                     | ODM, SAR                           | 15-300                 | 85-90                     |
| 158                | MSA                   | 475810<br>475811<br>475814<br>475815<br>475816<br>475817<br>475820<br>475821<br>481247<br>481251                                 | 60                         | FF                     | ODM, SAR                           | 15-300                 | 85-90                     |
| 159                | MSA                   | 474195<br>474225<br>475813<br>475819<br>481246<br>481250                                                                         | 30                         | FF                     | ODM, SAR                           | 15-300                 | 85-90                     |

## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Service<br>Life<br>of SCBA | Face-<br>piece<br>Type | Supplied Air<br>Respirator<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi. |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|----------------------------|------------------------|------------------------------------|------------------------|---------------------------|
| 160                           | MSA                   | 475964<br>475965<br>475968<br>475969<br>475983<br>475984<br>475987<br>475988         | 60                         | FF                     | ODM,SAR                            | 15-300                 | 85-90                     |
| 161                           | MSA                   | 475963<br>475967<br>475982<br>475986                                                 | 30                         | FF                     | ODM,SAR                            | 15-300                 | 85-90                     |
| 162                           | MSA                   | 475888 thru 475895<br>475826 thru 475833<br>481229 thru 481232<br>481239 thru 481242 | 30                         | FF                     | ODM,SAR                            | 15-300                 | 85-90                     |
| 163                           | MSA                   | 475902<br>475903<br>475868<br>475869<br>481233<br>481243                             | 15                         | FF                     | OPD,SAR                            | 15-300                 | 95-90                     |
| 164                           | National<br>Draeger   | 4050212 thru 4050219<br>4050226 thru 4050233<br>4054269 thru 4054274                 | 30                         | FF                     | ODM,SAR                            |                        |                           |
| 165                           | ISI                   | 707.127.00<br>707.127.01/.02/.03/.04                                                 | 5                          | FF                     | ODM,Es,SAR                         | 25-300                 | 80-100                    |

## COMBINATION SCBA AND SAR (DEMAND AND PRESSURE DEMAND)

| Approval<br>Number<br>TC-13F- | Approval<br>Issued to | Model<br>Number(s)                                                                           | Service<br>Life<br>of SCBA | Face-<br>piece<br>Type | Supplied Air<br>Respirator<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi. |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------|----------------------------|------------------------|------------------------------------|------------------------|---------------------------|
| 183                           | Dual Safe             | DS-100-1                                                                                     | 3                          | FF                     | OPD, Es, SAR                       | 50-250                 | 50-120                    |
| 184                           | Dual Safe             | DS-100-2                                                                                     | 3                          | FF                     | OPD, Es, SAR                       | 50-250                 | 50-120                    |
| 187                           | Scott                 | 900155-01<br>900155-02                                                                       | 5 min.                     | FF                     | OPD, Es, SAR                       | to 300                 | 70-125                    |
| 188                           | North                 | 85500                                                                                        | 5 min.                     | FF                     | OPD, Es, SAR                       | 12.5-300               | 78-80                     |
| 189                           | Clifton<br>Precision  | 7010400-1<br>7010400-2/3/4                                                                   | 5 min.                     | FF                     | OPD, Es, SAR                       | 25-300                 | 100-125                   |
| 190                           | ISI                   | 707.137.00<br>707.137.01                                                                     | 30 min.                    | FF                     | OPD, SAR                           | 25-300                 | 80-120                    |
| 191                           | ISI                   | 707.137.02<br>707.137.04                                                                     | 30 min.                    | FF                     | OPD, SAR                           | 25-300                 | 80-120                    |
| 192                           | ISI                   | 707.137.03                                                                                   | 60 min.                    | FF                     | OPD, SAR                           | 25-300                 | 80-120                    |
| 194                           | PMI                   | SAS100                                                                                       | 5                          | HH                     | OPD, Es, SAR                       | to 300                 | 70-80                     |
| 196                           | National<br>Draeger   | 4050602 thru 4050605<br>4050645 thru 4050647<br>4050651 thru 4050657<br>4054269 thru 4054274 | 5                          | FF                     | OPD, Es, SAR                       | 25-300                 | 85-120                    |
| 197                           | Interspiro            | 607-301-222<br>607-311-222<br>607-301-322<br>607-311-322<br>607-321-322                      | 60                         | FF                     | OPD, SAR                           | 25-300                 | 60-125                    |

Approval

Approved for respiratory protection against ...

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5% oxygen.

Refer to approval label and instruction and maintenance information on use and maintenance of these masks.

In making renewals and repairs, parts identical with those supplied by the manufacturer under the original approval shall be used.

**GAS MASKS (14G)**

Approval may include protection against specific gases, vapors, or particulates. The type of additional approval is listed on the label. See page 20 for definitions of particulate types.

Follow the manufacturer's instructions for checking the mask.

This respirator shall be selected, fitted, used, and maintained in accordance with the instructions of the manufacturer and the Federal Occupational Safety and Health Administration and the National Fire Protection Association.

## B. Gas Masks

### 1. Ammonia

#### Approval

Approved for respiratory protection against ammonia.

#### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

B. Gas Masks  
1. Ammonia

| Approval<br>Number<br>TC-14G- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                         | Respirator<br>Type | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------|-----------------|------------------------------------|
| 88                            | MSA                   | 448979<br>448980<br>448981<br>448982                                                                                                                                                       | Fm                 | FF                | D,M             |                                    |
| 93                            | Willson               | 2164F<br>2264F                                                                                                                                                                             | Fm                 | FF                | D,F,M           | MA                                 |
| 96                            | MSA                   | 465331<br>465327<br>471839<br>471840                                                                                                                                                       | Bm                 | FF                | H,A             | OV/CO/AG                           |
| 101                           | MSA                   | 448926<br>448927<br>448928<br>448929<br>448930<br>448931<br>448936<br>448937<br>448938<br>448939                                                                                           | Bm                 | FF                | D,M             |                                    |
| 103                           | Scott                 | 6030-1104*<br>6030-1204*<br>6030-2104*<br>6030-2204*<br>6030-3104*<br>6030-3204*<br>6030-4104*<br>6030-4204*<br>6030-5104*<br>6030-5204*<br>63-AM<br>63F-AM<br>63FG-AM<br>63R-AM<br>63S-AM | Fm, Es             | FF                | D,M             | MA                                 |
| 111                           | North                 | 7604L*<br>7604LS*<br>7604LN*<br>7604SLN*                                                                                                                                                   | Fm                 | FF                |                 |                                    |

GAS MASKS - AMMONIA

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                       | Respirator<br>Type                                    | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|--------------------|-----------------------|----------------------------------------------------------|-------------------------------------------------------|-------------------|-----------------|------------------------------------|
| TC-14G-            |                       |                                                          |                                                       |                   |                 |                                    |
| 112                | MSA                   | 469039<br>469040                                         | Fm, Es                                                | FF                | D,F,M           | OV/Cl                              |
| 121                | Pirelli               | 4333.2012                                                | Fm, Es                                                | FF                |                 |                                    |
| 126                | MSA                   | 472884<br>472885                                         | Fm, Es                                                | FF                | D,M             |                                    |
|                    |                       |                                                          | Combination Type C, CF<br>35-40 psig; 25-300 ft hose  |                   |                 |                                    |
| 128                | Pirelli               | 4333.2015                                                | Fm, Es                                                | FF                | H               |                                    |
| 132                | Racal                 | BE 3/K<br>BE 7/K                                         | PAPR                                                  | FF                |                 | MA                                 |
| 137                | MSA                   | 478120<br>478121                                         | SAR                                                   | FF                |                 |                                    |
|                    |                       |                                                          | Combination Type CE, CF<br>35-40 psig, 15-300 ft hose |                   |                 |                                    |
| 140                | Scott                 | 63-OAAM<br>63R-OAAM<br>63S-OAAM<br>63F-OAAM<br>63FG-OAAM | Rp,Fm                                                 | FF                | D,M             | OV/Cl/HCl<br>MA/H2S                |

## 2. Chlorine

### Approval

Approved for respiratory protection against chlorine.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and page 9 for gas and vapor.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.



B. Gas Masks  
2. Chlorine

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                       | Respirator<br>Type                                             | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|--------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------|-----------------|------------------------------------|
| TC-14G-            |                       |                                                                                                                                          |                                                                |                   |                 |                                    |
| 89                 | MSA                   | 460131<br>460132<br>460133<br>460134                                                                                                     | Fm                                                             | FF                | D,M             |                                    |
| 95                 | Willson               | 2162F<br>2262F                                                                                                                           | Fm                                                             | FF                | D,F,M           |                                    |
| 98                 | MSA                   | 460125<br>460126<br>460127<br>460128<br>460129<br>460130                                                                                 | Bm                                                             | FF                | D,M             | OV/H2S/PH3                         |
| 102                | Scott                 | 6030-1108*<br>6030-1208*<br>6030-2208*<br>6030-2108*<br>6030-3108*<br>6030-3208*<br>6030-4108*<br>6030-4208*<br>6030-5108*<br>6030-5208* | Fm, Es                                                         | FF                | D,M             |                                    |
| 105                | MSA                   | 466225<br>466226                                                                                                                         | Fm, Es                                                         | FF                | H,A             |                                    |
| 106                | MSA                   | 466231<br>466232                                                                                                                         | Fm, Es                                                         | FF                | H               |                                    |
| 112                | MSA                   | 469039<br>469040                                                                                                                         | Fm, Es                                                         | FF                | D,F,M           | OV/NH3                             |
| 113                | MSA                   | 468921                                                                                                                                   | SAR<br>(combination Type C, CF<br>35-40 psig; 25-300 ft. hose) | ON                | H,A             |                                    |

## GAS MASKS - CHLORINE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                 | Respirator<br>Type                                             | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------|-----------------|------------------------------------|
| TC-14G-            |                       |                                                                                                                                                                                                    |                                                                |                   |                 |                                    |
| 114                | MSA                   | 468922                                                                                                                                                                                             | SAR<br>(combination type C, CF<br>35-40 psig; 25-300 ft. hose) | ON                | H,A             |                                    |
| 118                | Scott                 | 6030-1175*<br>6030-1275*<br>6030-2175*/6030-2275*<br>6030-3175*/6030-3275*<br>6030-4175*/6030-4275*<br>6030-5175*/6030-5275*<br>63-TEDA-H<br>63F-TEDA-H<br>63FG-TEDA-H<br>63R-TEDA-H<br>63S-TEDA-H | Fm, Es                                                         | FF                | H               |                                    |
| 123                | Racal                 | BE 3/B<br>BE 7/B                                                                                                                                                                                   | PAPR, FF                                                       | FF                |                 | HCl                                |
| 129                | Scott                 | 63-OA<br>63F-OA<br>63FG-OA<br>63R-OA<br>63S-OA                                                                                                                                                     | Fm, Es                                                         | FF                | D,M             | HCl/OV/H2S<br>SO2/CH2-O            |
| 130                | Scott                 | 63-CL<br>63F-CL<br>63FG-CL<br>63R-CL<br>63S-CL                                                                                                                                                     | Fm, Es                                                         | FF                | D,M             | HCl/H2S<br>CH2-O                   |
| 131                | Scott                 | 63CL-H<br>63F-CL-H<br>63FG-CL-H<br>63R-CL-H<br>63S-CL-H                                                                                                                                            | Fm, Es                                                         | FF                | H,R,A           | HCl/H2S<br>CH2-O                   |
| 140                | Scott                 | 63-OAAM<br>63R-OAAM<br>63S-OAAM<br>63F-OAAM<br>63FG-OAAM                                                                                                                                           | Rp, Fm                                                         | FF                | D,M             | OV/MA/HCl<br>NH3/H2S               |

### 3. Sulfur Dioxide

#### Approval

Approved for respiratory protection against sulfur dioxide.

#### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

Do not use in concentrations which generate high heats of reaction with sorbent material.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

B. Gas Masks  
3. Sulfur Dioxide

| Approval<br>Number<br>TC-14G- | Approval<br>Issued to | Model<br>Number(s)                             | Respirator<br>Type | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|-------------------------------|-----------------------|------------------------------------------------|--------------------|-------------------|-----------------|------------------------------------|
| 92                            | MSA                   | 461133<br>461134<br>461140<br>461141           | Fm                 | FF                | D,M             |                                    |
| 129                           | Scott                 | 63-OA<br>63F-OA<br>63FG-OA<br>63R-OA<br>63S-OA | Fm, Es             | FF                | D,M             | Cl/HCl/OV<br>H2S/CH2-O             |

#### 4. Acid Gases

##### Approval

Approved for respiratory protection against acid gases.

##### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

Do not use in concentrations which generate high heats of reaction with sorbent material.

Not for use against gases and vapors with poor warning properties.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

B. Gas Masks  
4. Acid Gas

| Approval<br>Number<br>TC-14G- | Approval<br>Issued to | Model<br>Number(s)                                       | Respirator<br>Type | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|-------------------------------|-----------------------|----------------------------------------------------------|--------------------|-------------------|-----------------|------------------------------------|
| 96                            | MSA                   | 465331<br>465327<br>471839<br>471840                     | Bm                 | FF                | H,A             | OV/CO/AG                           |
| 100                           | MSA                   | 460119<br>460120<br>460121<br>460122<br>460123<br>460124 | Bm                 | FF                | D,M             | OV                                 |
| 107                           | MSA                   | 466227<br>466351<br>466228<br>466350                     | Fm, Es             | FF                | D,M             | OV/CH2-O                           |
| 127                           | Willson               | 2165, 2265                                               | Fm, Es             | FF                | D,M             | OV                                 |
| 133                           | Racal                 | BE 3/E<br>BE 7/E                                         | PAPR, FF           | FF                |                 |                                    |

## 5. Organic Vapors

Approved for respiratory protection against organic vapors.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

Do not wear for protection against gases or vapors with poor warning properties or those which generate high heats of reaction with sorbent materials in the canister.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

B. Gas Masks  
5. Organic Vapor

| Approval<br>Number<br>TC-14G- | Approval<br>Issued to | Model<br>Number(s)                          | Respirator<br>Type | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|-------------------------------|-----------------------|---------------------------------------------|--------------------|-------------------|-----------------|------------------------------------|
| 86                            | MSA                   | 448983 thru<br>448986                       | Fm                 | FF                | H,A             | Pest                               |
| 87                            | MSA                   | 448975 thru<br>448978                       | Fm                 | FF                | D,M             |                                    |
| 96                            | MSA                   | 465331<br>465327<br>471839<br>471840        | Bm                 | FF                | H,A             | NH3/CO/AG                          |
| 97                            | MSA                   | 448932 thru<br>448935<br>448920 thru 448925 | Bm                 | FF                | D,M             |                                    |
| 98                            | MSA                   | 460125 thru<br>460130                       | Bm                 | FF                | D,M             | Cl/H2S/PH3                         |
| 99                            | MSA                   | 448940 thru<br>448943                       | Bm                 | FF                | H               | Pest                               |
| 100                           | MSA                   | 460119 thru<br>460124                       | Bm                 | FF                | D,M             | AG                                 |



GAS MASKS - ORGANIC VAPOR

| Approval<br>Number<br>TC-14G- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                         | Respirator<br>Type                                                | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------|-----------------|------------------------------------|
| 104                           | Scott                 | 6030-1113*<br>6030-1213*<br>6030-2113*<br>6030-2213*<br>6030-3113*<br>6030-3213*<br>6030-4113*<br>6030-4213*<br>6030-5113*<br>6030-5213*<br>63-OV<br>63F-OV<br>63FG-OV<br>63R-OV<br>63S-OV | Fm, Es                                                            | FF                | D,M             |                                    |
| 107                           | MSA                   | 466227<br>466351<br>466228<br>466350                                                                                                                                                       | Fm, Es                                                            | FF                | D,M             | AG<br>CH2-O                        |
| 108                           | MSA                   | 466229<br>466230                                                                                                                                                                           | Fm, Es                                                            | FF                | H,A             |                                    |
| 110                           | North                 | 7601L*<br>7601LN*<br>7601LS*<br>7601LSN*                                                                                                                                                   | Fm                                                                | FF                |                 |                                    |
| 112                           | MSA                   | 469039<br>469040                                                                                                                                                                           | Fm, Es                                                            | FF                | D,F,M           | NH3/Cl                             |
| 115                           | MSA                   | 469268<br>469269                                                                                                                                                                           | Fm<br>(combination Type C, CF<br>35-40 psig; 25-300 ft. hose)     | FF                | H,A             |                                    |
| 116                           | MSA                   | 469270                                                                                                                                                                                     | Fm, Es<br>(combination Type C, CF<br>35-40 psig; 25-300 ft. hose) | ON                | H,A             |                                    |

## GAS MASKS - ORGANIC VAPOR

| Approval<br>Number<br>TC-14G- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                   | Respirator<br>Type                                               | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|-------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------|-----------------|------------------------------------|
| 117                           | Scott                 | 6030-1157*<br>6030-1257*<br>6030-2157*<br>6030-2257*<br>6030-3157*<br>6030-3257*<br>6030-4157*<br>6030-4257*<br>6030-5157*<br>6030-5257*<br>63-OV-H<br>63FG-OV-H<br>63F-OV-H<br>63R-OV-H<br>63S-OV-H | Fm, Es                                                           | FF                | H               | Pest                               |
| 119                           | Pirelli               | 4333.2011                                                                                                                                                                                            | Fm, Es                                                           | FF                |                 |                                    |
| 120                           | Pirelli               | 4333.2014                                                                                                                                                                                            | Fm, Es                                                           | FF                | H               |                                    |
| 122                           | Racal                 | BE 3/A<br>BE 7/A                                                                                                                                                                                     | PAPR, FF                                                         | FF                |                 |                                    |
| 124                           | MSA                   | 472886<br>472887                                                                                                                                                                                     | SAR                                                              | FF                | H,A             | Pest                               |
|                               |                       |                                                                                                                                                                                                      | Combination Type C, CF<br>35-40 psig and hose length 25-300 feet |                   |                 |                                    |
| 125                           | MSA                   | 472882<br>472883                                                                                                                                                                                     | SAR                                                              | FF                | D,M             | AG                                 |
|                               |                       |                                                                                                                                                                                                      | Combination Type C, CF<br>35-40 psig; hose length 25-300 feet    |                   |                 |                                    |
| 127                           | Willson               | 2165<br>2265                                                                                                                                                                                         | Fm, Es                                                           | FF                | D,M             | AG                                 |

GAS MASKS - ORGANIC VAPOR

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                       | Respirator<br>Type         | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|--------------------|-----------------------|----------------------------------------------------------|----------------------------|-------------------|-----------------|------------------------------------|
| TC-14G-            |                       |                                                          |                            |                   |                 |                                    |
| 129                | Scott                 | 63-OA<br>63F-OA<br>63FG-OA<br>63R-OA<br>63S-OA           | Fm, Es                     | FF                | D,M             | HCl/Cl/<br>H2S/SO2/<br>CH2-O       |
| 136                | MSA                   | 478118<br>478119                                         | SAR<br>Combination         | FF<br>Type CE, CF | D,M             |                                    |
|                    |                       |                                                          | 35-40 psig, 15-300 ft hose |                   |                 |                                    |
| 138                | MSA                   | 478122<br>478123                                         | SAR<br>Combination         | FF<br>Type CE, CF | H,A             | Pest                               |
|                    |                       |                                                          | 35-40 psig, 15-300 ft hose |                   |                 |                                    |
| 139                | MSA                   | 478124<br>478125                                         | SAR<br>Combination         | FF<br>type CE, CF | H,A             |                                    |
|                    |                       |                                                          | 35-40 psig, 15-300 ft hose |                   |                 |                                    |
| 140                | Scott                 | 63-OAAM<br>63R-OAAM<br>63S-OAAM<br>63F-OAAM<br>63FG-OAAM | Rp,Fm                      | FF                | D,M             | MA/Cl/HCl<br>NH3/H2S               |

6. Carbon Monoxide

Approval

Approved for respiratory protection against carbon monoxide.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

# B. Gas Masks

## 6. Carbon Monoxide

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                   | Respirator<br>Type | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|--------------------|-----------------------|--------------------------------------|--------------------|-------------------|-----------------|------------------------------------|
| TC-14G-            |                       |                                      |                    |                   |                 |                                    |
| 82                 | MSA                   | 455299<br>(W65)                      | Es                 | M                 |                 |                                    |
| 83                 | Drager                | FSR810<br>FSR910                     | Es                 | M                 |                 |                                    |
| 96                 | MSA                   | 465331<br>465327<br>471839<br>471840 | Bm                 | FF                | H,A             | NH3/OV/AG                          |

## 7. Pesticides

### Approval

Approved for respiratory protection against pesticides.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

Do not wear for protection against gases or vapors with poor warning properties or those which generate high heats of reaction with sorbent materials in the canister.

Not approved for fumigants.

Refer to pesticide label for limitations on respirator use.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

B. Gas Masks  
7. Pesticide

| Approval<br>Number<br>TC-14G- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                       | Respirator<br>Type                                                          | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|-------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------|-----------------|------------------------------------|
| 86                            | MSA                   | 448983 thru<br>448986                                                                                                                                                                    | Fm                                                                          | FF                | H,A             | OV                                 |
| 94                            | Willson               | 2161F<br>2261F                                                                                                                                                                           | Fm                                                                          | FF                | D,F,M           | OV                                 |
| 99                            | MSA                   | 448940 thru<br>448943                                                                                                                                                                    | Bm                                                                          | FF                | H               | OV                                 |
| 117                           | Scott                 | 6030-1157*<br>6030-1257*<br>6030-2157*/6030-2257*<br>6030-3157*/6030-3257*<br>6030-4157*/6030-4257*<br>6030-5157*/6030-5257*<br>63-OV-H<br>63F-OV-H<br>63FG-OV-H<br>63R-OV-H<br>63S-OV-H | Fm, Es                                                                      | FF                | H               | OV                                 |
| 124                           | MSA                   | 472886<br>472887                                                                                                                                                                         | SAR<br><br>Combination Type C, CF<br>35-40 psig and hose length 25-300 feet | FF                | H,A             | OV                                 |
| 138                           | MSA                   | 478122<br>478123                                                                                                                                                                         | SAR<br><br>Combination Type CE, CF<br>35-40 psig, 15-300 ft hose            | FF                | H,A             | OV                                 |

## 8. Other gases and vapors

### Approval

See approval labels for approved maximum use concentration and for specific limitations.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.



B. Gas Masks

8. Other Gases and Vapors - Vinyl Chloride

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                           | Respirator<br>Type | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|--------------------|-----------------------|------------------------------------------------------------------------------|--------------------|-------------------|-----------------|------------------------------------|
| TC-14G-            |                       |                                                                              |                    |                   |                 |                                    |
| 84                 | MSA                   | 461481 thru<br>461486                                                        | Bm                 | FF                |                 |                                    |
| 85                 | Scott                 | 601211-17<br>601221-17<br>601111-17<br>601121-17<br>601511-17<br>601521-17   | Bm                 | FF                |                 |                                    |
| 91                 | North<br>Safety       | 7820*<br>7820S*<br>7820N*<br>7820SN*<br>7829*<br>7829S*<br>7829N*<br>7829SN* | Bm                 | FF                |                 |                                    |

B. Gas Masks

8. Other Gases and Vapors - Phosphine

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s) | Respirator<br>Type | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|--------------------|-----------------------|--------------------|--------------------|-------------------|-----------------|------------------------------------|
| TC-14G-            |                       |                    |                    |                   |                 |                                    |
| 98                 | MSA                   | 460125             | Bm                 | FF                | D,M             | OV/H2S/Cl                          |
|                    |                       | 460126             |                    |                   |                 |                                    |
|                    |                       | 460127             |                    |                   |                 |                                    |
|                    |                       | 460128             |                    |                   |                 |                                    |
|                    |                       | 460129             |                    |                   |                 |                                    |
|                    |                       | 460130             |                    |                   |                 |                                    |

## B. Gas Masks

## 8. Other Gases and Vapors - Hydrogen Sulfide

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                       | Respirator<br>Type | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|--------------------|-----------------------|----------------------------------------------------------|--------------------|-------------------|-----------------|------------------------------------|
| TC-14G-            |                       |                                                          |                    |                   |                 |                                    |
| 98                 | MSA                   | 460125<br>460126<br>460127<br>460128<br>460129<br>460130 | Bm                 | FF                | D,M             | OV/PH3/Cl                          |
| 129                | Scott                 | 63-OA<br>63F-OA<br>63FG-OA<br>63R-OA<br>63S-OA           | Fm, Es             | FF                | D,M             | HCl/OV/Cl/<br>SO2/CH2-O            |
| 130                | Scott                 | 63-CL<br>63F-CL<br>63FG-CL<br>63R-CL<br>63S-CL           | Fm, Es             | FF                | D,M             | Cl/HCl<br>CH2-O                    |
| 131                | Scott                 | 63CL-H<br>63F-CL-H<br>63FG-CL-H<br>63R-CL-H<br>63S-CL-H  | Fm, Es             | FF                | H,R,A           | Cl/HCl<br>CH2-O                    |
| 140                | Scott                 | 63-OAAM<br>63R-OAAM<br>63S-OAAM<br>63F-OAAM<br>63FG-OAAM | Rp, Fm             | FF                | D,M             | OV/Cl/HCl<br>NH3/MA                |

B. Gas Masks

8. Other Gases and Vapors - Hydrogen Chloride

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                       | Respirator<br>Type | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|--------------------|-----------------------|----------------------------------------------------------|--------------------|-------------------|-----------------|------------------------------------|
| TC-14G-            |                       |                                                          |                    |                   |                 |                                    |
| 123                | Racal                 | BE 3/B<br>BE 7/B                                         | PAPR               | FF                |                 | C1                                 |
| 129                | Scott                 | 63-OA<br>63F-OA<br>63FG-OA<br>63R-OA<br>63S-OA           | Fm, Es             | FF                | D,M             | H2S/OV/C1/<br>SO2/CH2-O            |
| 130                | Scott                 | 63-CL<br>63F-CL<br>63FG-CL<br>63R-CL<br>63S-CL           | Fm, Es             | FF                | D,M             | C1/H2S<br>CH2-O                    |
| 131                | Scott                 | 63CL-H<br>63F-CL-H<br>63FG-CL-H<br>63R-CL-H<br>63S-CL-H  | Fm, Es             | FF                | H,R,A           | C1/H2S<br>CH2- O                   |
| 140                | Scott                 | 63-OAAM<br>63R-OAAM<br>63S-OAAM<br>63F-OAAM<br>63FG-OAAM | Rp, Fm             | FF                | D,M             | OV/C1/NH3<br>MA/H2S                |

B. Gas Masks

8. Other Gases and Vapors -- Ethylene Oxide

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s) | Respirator<br>Type | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|--------------------|-----------------------|--------------------|--------------------|-------------------|-----------------|------------------------------------|
| TC-14G-            |                       |                    |                    |                   |                 |                                    |
| 134                | MSA                   | 474143<br>474144   | FM                 | FF                | D,M             |                                    |

B. Gas Masks

8. Other Gases and Vapors - Hydrogen Fluoride

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s) | Respirator<br>Type | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|--------------------|-----------------------|--------------------|--------------------|-------------------|-----------------|------------------------------------|
| TC-14G-            |                       |                    |                    |                   |                 |                                    |
| 135                | MSA                   | 476451<br>476453   | Fm, Es             | FF                | H,A             |                                    |

B. Gas Masks

8. Other gases and vapors - Formaldehyde

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                       | Respirator<br>Type | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |
|--------------------|-----------------------|----------------------------------------------------------|--------------------|-------------------|-----------------|------------------------------------|
| TC-14G-            | MSA                   | 466227<br>466351<br>466228<br>466350                     | Fm, Es             | FF                | D,M             | OV/AG                              |
| 129                | Scott                 | 63-OA<br>63F-OA<br>63FG-OA<br>63R-OA<br>63S-OA           | Fm, Es             | FF                | D,M             | H2S,HCl<br>Cl,S02,OV               |
| 130                | Scott                 | 63-C1<br>63F-C1<br>63FG-C1<br>63R-C1<br>63S-C1           | Fm, Es             | FF                | D,M             | H2S,HCl<br>Cl                      |
| 131                | Scott                 | 63-C1-H<br>63F-C1-H<br>63FG-C1-H<br>63R-C1-H<br>63S-C1-H | Fm, Es             | FF                | H,R,A           | H2S,HCl<br>Cl                      |

B. Gas Masks

8. Other gases and vapors - Methylamine

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s) | Respirator<br>Type                                       | Facepiece<br>Type | DFM<br>Approval | Other gas<br>and Vapor<br>Approval |                      |
|--------------------|-----------------------|--------------------|----------------------------------------------------------|-------------------|-----------------|------------------------------------|----------------------|
| TC-14G-            | 140                   | Scott              | 63-OAAM<br>63R-OAAM<br>63S-OAAM<br>63F-OAAM<br>63FG-OAAM | Rp,Fm             | FF              | D,M                                | OV/Cl/HCl<br>NH3/H2S |



SUPPLIED AIR RESPIRATORS (19C)

## C. Supplied Air Respirators

### 1. Type C Continuous Flow

#### Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

#### Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths and pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

C. Supplied Air Respirators  
1. Type C Continuous Flow

| Approval<br>Number | Approval<br>Issued to            | Model<br>Number(s)                 | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi |
|--------------------|----------------------------------|------------------------------------|-----------------------------------|------------------------|------------------------|--------------------------|
| TC-19C-            |                                  |                                    |                                   |                        |                        |                          |
| 64                 | Cesco                            | PI-800-AA<br>PI-800-/DA/NA/AAHF    | Bm                                | HH                     | 15-50<br>75-100        | 6-17<br>7-20             |
| 64                 | US Safety                        | PI-800-AA<br>PI-800-DA/-NA/-AAHF   | Bm                                | HH                     | 15-50<br>75-100        | 6-17<br>7-20             |
| 64                 | Wheeler<br>Protective<br>Apparel | 17032<br>17032A<br>17036<br>17036H | Bm                                | HH                     | 15-50<br>75-100        | 6-17<br>7-20             |
| 65                 | USD Corp.                        | 9011-12<br>9811-12                 | Fm                                | FF                     | 4-250                  | 50-125                   |
| 66                 | USD Corp.                        | 9011-14<br>9811-14                 | Fm                                | FF                     | 4-250                  | 50-125                   |
| 67                 | USD Corp.                        | 9011-13<br>9811-13/16              | Fm                                | FF                     | 4-250                  | 50-125                   |
| 68                 | USD Corp.                        | 9011-15<br>9811-15/17              | Fm                                | FF                     | 4-250                  | 50-125                   |
| 69                 | 3M                               |                                    | Bm                                | HH                     | 25 & 50                | 25-35                    |
|                    |                                  | W-280-100/50/25                    |                                   |                        |                        |                          |
|                    |                                  | W-283-100/50/25*                   |                                   |                        | 100                    | 30-45                    |
|                    |                                  | W-286-100/50/25                    |                                   |                        | 200                    | 35-60                    |
|                    |                                  | W-292-100/50/25                    |                                   |                        | 300                    | 40-75                    |
|                    |                                  | W-308-100/50/25                    |                                   |                        |                        |                          |
|                    |                                  | W-313-100/50/25                    |                                   |                        |                        |                          |
|                    |                                  | W-314-100/50/25                    |                                   |                        |                        |                          |
|                    |                                  | W-318-100/50/25                    |                                   |                        |                        |                          |
|                    |                                  | W-321-100*S/M/L                    |                                   |                        |                        |                          |
|                    |                                  | W-321-25*S/M/L                     |                                   |                        |                        |                          |
|                    |                                  | W-321-50*S/M/L                     |                                   |                        |                        |                          |
|                    |                                  | W-329-100/50/25                    |                                   |                        |                        |                          |
|                    |                                  | W-332-100/50/25                    |                                   |                        |                        |                          |
|                    |                                  | W-335-100/50/25                    |                                   |                        |                        |                          |
|                    |                                  | W-338-100/50/25                    |                                   |                        |                        |                          |
|                    |                                  | W-346-100/50/25                    |                                   |                        |                        |                          |
|                    |                                  | W-352-100/50/25                    |                                   |                        |                        |                          |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval         | Model           | Regulator<br>or Valve | Face-<br>piece | Hose<br>Length | Pressure<br>Range |
|--------------------|------------------|-----------------|-----------------------|----------------|----------------|-------------------|
| TC-19C-            | Issued to        | Number(s)       | Location              | Type           | feet           | psi               |
| 69-Cont.           |                  | W-368-25/50/100 |                       |                |                |                   |
|                    |                  | W390            |                       |                |                |                   |
|                    |                  | W394            |                       |                |                |                   |
|                    |                  | W398            |                       |                |                |                   |
|                    |                  | W-371-25/50/100 |                       |                |                |                   |
|                    |                  | W-810-100/50/25 |                       |                |                |                   |
|                    |                  | W-840-100/50/25 |                       |                |                |                   |
|                    |                  | W-856-100L/M/S* |                       |                |                |                   |
|                    |                  | W-856-25L/M/S   |                       |                |                |                   |
|                    |                  | W-856-50L/M/S   |                       |                |                |                   |
|                    |                  | W-858-100/50/25 |                       |                |                |                   |
|                    |                  | W-870-100/50/25 |                       |                |                |                   |
| 69                 | Pauli            | W-858-100/50/25 |                       |                |                |                   |
|                    | & Griffin*       | "               |                       |                |                |                   |
|                    | Clemco*          | "               |                       |                |                |                   |
|                    | Bowen Tools*     | "               |                       |                |                |                   |
|                    | Empire Abrasive* | "               |                       |                |                |                   |
|                    | Kelco Sales*     | "               |                       |                |                |                   |
|                    | Pangborn*        | "               |                       |                |                |                   |

|    |    |                       |    |        |       |
|----|----|-----------------------|----|--------|-------|
| 70 | 3M | Bm                    | HH | 25-100 | 60-80 |
|    |    | W-281-100/50/25       |    |        |       |
|    |    | W-284-100/50/25*      |    |        |       |
|    |    | W-287-100/50/25       |    |        |       |
|    |    | W-293-100/50/25*      |    |        |       |
|    |    | W-310-100/50/25       |    |        |       |
|    |    | W-311-100/50/25       |    |        |       |
|    |    | W-315-100/50/25       |    |        |       |
|    |    | W-317-100/50/25       |    |        |       |
|    |    | W-322-100/50/25L      |    |        |       |
|    |    | W-322-100/50/25M      |    |        |       |
|    |    | W-322-100S*/50S*/25S* |    |        |       |
|    |    | W-328-100/50/25       |    |        |       |
|    |    | W-330-100/50/25       |    |        |       |
|    |    | W-333-100/50/25       |    |        |       |
|    |    | W-336-100/50/25       |    |        |       |
|    |    | W-347-25/50/100       |    |        |       |
|    |    | W-354-25/100/50       |    |        |       |
|    |    | W-369-25/50/100       |    |        |       |
|    |    | W-370-25/50/100       |    |        |       |
|    |    | W-372-25/50/100       |    |        |       |
|    |    | W-820-100/50/25       |    |        |       |
|    |    | W-880-100/50/25       |    |        |       |
|    |    | W-881-100/50/25L/M    |    |        |       |
|    |    | W-881-100/50/25S*     |    |        |       |
|    |    | W-888-100/50/25*      |    |        |       |
|    |    | W-890-100/50/25       |    |        |       |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval        | Model                  | Regulator<br>or Valve | Face-<br>piece | Hose<br>Length | Pressure<br>Range |
|--------------------|-----------------|------------------------|-----------------------|----------------|----------------|-------------------|
| TC-19C-            | Issued to       | Number(s)              | Location              | Type           | feet           | psi               |
| 70 Cont            |                 |                        |                       |                |                |                   |
|                    |                 | W389                   |                       |                |                |                   |
|                    |                 | W393                   |                       |                |                |                   |
|                    |                 | W397                   |                       |                |                |                   |
|                    | Pauli           | W-888-100/50/25        |                       |                |                |                   |
|                    | & Griffin       | "                      |                       |                |                |                   |
|                    | Clemco          | "                      |                       |                |                |                   |
|                    | Bowen Tools     | "                      |                       |                |                |                   |
|                    | Empire Abrasive | "                      |                       |                |                |                   |
|                    | Kelco Sales     | "                      |                       |                |                |                   |
|                    | Pangborn        | "                      |                       |                |                |                   |
| 71                 | Scott           | 4616-11/12/15 Bm       |                       | FF             | 15-50          | 12-25             |
|                    |                 | 4616-21/22/25          |                       |                | 50-250         | 25-40             |
|                    |                 | 4622-11/12/15/21/22/25 |                       |                |                |                   |
| 72                 | Scott           | Bm                     |                       | FF             | 15-50          | 6-16              |
|                    |                 | 4616-18/19/28/29       |                       |                |                |                   |
|                    |                 | 4622-18/19/28/29       |                       |                | 50-250         | 16-22             |
| 73                 | Scott           | 802230 series Fm       |                       | FF             | 3-250          | 60-125            |
| 78                 | MSA             | 460862                 | Bm                    | ON, FF         | 25-300         | 35-40             |
|                    |                 | 460863                 |                       |                |                |                   |
|                    |                 | 460864                 |                       |                |                |                   |
|                    |                 | 460865                 |                       |                |                |                   |
|                    |                 | 461708                 |                       |                |                |                   |
|                    |                 | 461717                 |                       |                |                |                   |
|                    |                 | 461718                 |                       |                |                |                   |
|                    |                 | 461719                 |                       |                |                |                   |
|                    |                 | 469716                 |                       |                |                |                   |
|                    |                 | 469717                 |                       |                |                |                   |
|                    |                 | 469720                 |                       |                |                |                   |
|                    |                 | 469721                 |                       |                |                |                   |
|                    |                 | 475146                 |                       |                |                |                   |
|                    |                 | 475147                 |                       |                |                |                   |
|                    |                 | 475148                 |                       |                |                |                   |
|                    |                 | 475149                 |                       |                |                |                   |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                           | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet       | Pressure<br>Range<br>psi |
|--------------------|-----------------------|------------------------------------------------------------------------------|-----------------------------------|------------------------|------------------------------|--------------------------|
| 80                 | MSA                   | 460903<br>460904<br>460905<br>460906<br>461709<br>461710<br>461711<br>461712 | Bm                                | HH                     | 25-300                       | 55-60                    |
| 81                 | MSA                   | 460907<br>460908<br>460909<br>460910<br>461713<br>461714<br>461715<br>461716 | Bm                                | HH                     | 25-300                       | 55-60                    |
| 82                 | Pulmosan              | AL180-10168                                                                  | Bm                                | FF                     | 15-50                        | 6-8                      |
| 83                 | Willson               | 1810-A/B/C/D/E<br>1810*<br>1820*<br>1820-A/B/C/D/E                           | Bm                                | ON                     | 15-100<br>100-300            | 10-32<br>21-50           |
| 84                 | Bullard               | 77<br>46                                                                     | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                 | Anderson              | 77<br>46                                                                     | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                 | Bowen                 | 77<br>46                                                                     | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                 | Quaker<br>State       | 77<br>46                                                                     | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number<br>TC-19C- | Approval<br>Issued to | Model<br>Number(s) | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet       | Pressure<br>Range<br>psi |
|-------------------------------|-----------------------|--------------------|-----------------------------------|------------------------|------------------------------|--------------------------|
| 84                            | Pauli and<br>Griffin  | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | Empire                | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | Kelco                 | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25 300 | 80-95<br>8-15<br>80-95   |
| 84                            | Marthens              | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | Ace                   | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | Clemtex               | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | A-BEC                 | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25 300 | 80-95<br>8-15<br>80-95   |
| 84                            | Schmidt               | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | Matfer                | 77<br>46           | Bm                                | HH                     | 25-200<br>25-300<br>100 only | 80-95<br>80-95<br>8-15   |
| 84                            | Air<br>Components     | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |



## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                                                                       | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet        | Pressure<br>Range<br>psi |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|-------------------------------|--------------------------|
| 84                 | Porter<br>Warner      | 77<br>46                                                                                                                                                                                                                                                 | Bm                                | HH                     | 25-200<br>100 only<br>25-300  | 80-95<br>8-15<br>80-95   |
| 84                 | Clark Sand            | 77<br>46                                                                                                                                                                                                                                                 | Bm                                | HH                     | 25-200<br>100 only<br>25-300  | 80-95<br>8-15<br>80-95   |
| 84                 | Sulliblast            | 77<br>46                                                                                                                                                                                                                                                 | Bm                                | HH                     | 25-200<br>100 only<br>25-300  | 80-95<br>8-15<br>80-95   |
| 84                 | Key Houston           | 77<br>46                                                                                                                                                                                                                                                 | Bm                                | HH                     | 25-200<br>100 only<br>25-300  | 80-95<br>8-15<br>80-95   |
| 85                 | Clemco                | 46 (PCE)                                                                                                                                                                                                                                                 | Bm                                | HH                     | 25-200<br>100 only<br>25-300  | 80-95<br>8-15<br>80-95   |
| 86                 | AO                    | R6099<br>R5099<br>S5099<br>S6099                                                                                                                                                                                                                         | Bm                                | ON                     | 12.5-75<br>100-175<br>200-300 | 7-15<br>13-25<br>18-35   |
| 87                 | 3M                    | W-270-100/50/25<br>W-271-100/50/25<br>W-272-100/50/25<br>W-274-100/50/25L/M/<br>W-274-100/50/25S*<br>W-277-S/M/L*<br>W-282-100/50/25<br>W-285-100/50/25*<br>W-288-100/50/25<br>W-294-100/50/25*<br>W-309-100/50/25<br>W-312-100/50/25<br>W-319-100/50/25 | Bm                                | HH                     | 25-100                        | 60-70                    |



## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval                                                                             | Model                                                                                                                                                                                                                   | Regulator<br>or Valve | Face-<br>piece | Hose<br>Length                          | Pressure<br>Range                |
|--------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------|-----------------------------------------|----------------------------------|
| TC-19C-            | Issued to                                                                            | Number(s)                                                                                                                                                                                                               | Location              | Type           | feet                                    | psi                              |
| 87                 | Cont.                                                                                | W-320-100/50/25M/L<br>W-320-100/50/25S*<br>W-323-100/50/25<br>W-327-100/50/25<br>W-331-100/50/25<br>W-334-100/50/25<br>W-337-25/50/100<br>W-348-25/50/100<br>W-353-25/50/100<br>W-373-25/50/100<br>W388<br>W392<br>W396 |                       |                |                                         |                                  |
| 87                 | Pangborn*<br>Pauli&Griffin*<br>Bowen Tools*<br>Clemco*<br>Empire Abrasive*<br>Kelco* | W-271-100/50/25<br>"<br>"<br>"<br>"<br>"                                                                                                                                                                                |                       |                |                                         |                                  |
| 88                 | Binks                                                                                | 40-160<br>40-200/220/240/260/280/300/320                                                                                                                                                                                | Bm                    | ON             | 25-300                                  | 35-40                            |
| 89                 | AO                                                                                   | R56001                                                                                                                                                                                                                  | Bm                    | HH             | 12.5-25<br>50-100<br>125-200<br>225-300 | 10-20<br>18-32<br>25-40<br>35-60 |
| 92                 | Globe                                                                                | 2185-6<br>2185-4                                                                                                                                                                                                        | Fm                    | FF             | 25-200                                  | 60-70                            |
| 94                 | Willson                                                                              | 1850*<br>1860*<br>1850A/B/C/D/E<br>1860A/B/C/D/E                                                                                                                                                                        | Bm                    | FF             | 15-100<br>100-300                       | 11-32<br>21-50                   |
| 95                 | Pulmosan                                                                             | 10159<br>10237<br>11033<br>AL330*                                                                                                                                                                                       | Bm                    | ON             | 15-50                                   | 6-9                              |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval                         | Model                                              | Regulator<br>or Valve | Face-<br>piece | Hose<br>Length               | Pressure<br>Range       |
|--------------------|----------------------------------|----------------------------------------------------|-----------------------|----------------|------------------------------|-------------------------|
| TC-19C-            | Issued to                        | Number(s)                                          | Location              | Type           | feet                         | psi                     |
| 96                 | Cesco                            | 801-AA/DA/NA/AAHF                                  | Bm                    | HH             | 15-100                       | 60-100                  |
| 96                 | US Safety                        | 801-AA/DA/NA/AAHF                                  | Bm                    | HH             | 15-100                       | 60-100                  |
| 96                 | Wheeler<br>Protective<br>Apparel | 17232<br>17232H<br>17236<br>17236H                 | Bm                    | HH             | 15-100                       | 60-100                  |
| 97                 | Scott                            | 802280-01<br>802280-02/05/06/09/10/13/14           | Fm                    | ON             | 3-250                        | 60-125                  |
| 102                | Bullard                          | 999-3<br>999-4<br>999-5<br>999-6<br>999-7<br>999-8 | Bm                    | HH             | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15 |
| 102                | Anderson                         | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                    | HH             | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15 |
| 102                | Bowen                            | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                    | HH             | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15 |
| 102                | Pauli &<br>Griffin               | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                    | HH             | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15 |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number<br>TC-19C- | Approval<br>Issued to | Model<br>Number(s)                                 | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet       | Pressure<br>Range<br>psi |
|-------------------------------|-----------------------|----------------------------------------------------|-----------------------------------|------------------------|------------------------------|--------------------------|
| 102                           | Empire                | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Deane                 | 999-7<br>999-8                                     | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Kelco                 | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Titan                 | 999-3<br>999-4<br>999-5<br>999-6<br>999-7<br>999-8 | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | A-BEC                 | 999-3<br>999-4<br>999-5<br>999-6                   | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Schmidt               | 999-3<br>999-4<br>999-5<br>999-6                   | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Key Houston           | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s) | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi |
|--------------------|-----------------------|--------------------|-----------------------------------|------------------------|------------------------|--------------------------|
| 102                | Clemco                | 999-3              | Bm                                | HH                     | 10-100                 | 12-25                    |
|                    |                       | 999-4              |                                   |                        | 10-100                 | 80-100                   |
|                    |                       | 999-5              |                                   |                        | 100 only               | 8-15                     |
|                    |                       | 999-7              |                                   |                        |                        |                          |
|                    |                       | 999-8              |                                   |                        |                        |                          |
| 102                | Binks                 | 999-3              | Bm                                | HH                     | 10-100                 | 12-25                    |
|                    |                       | 999-4              |                                   |                        | 10-100                 | 80-100                   |
|                    |                       | 999-5              |                                   |                        | 100 only               | 8-15                     |
|                    |                       | 999-7              |                                   |                        |                        |                          |
|                    |                       | 999-8              |                                   |                        |                        |                          |
| 102                | Air<br>Components     | 999-3              | Bm                                | HH                     | 10-100                 | 12-25                    |
|                    |                       | 999-4              |                                   |                        | 10-100                 | 80-100                   |
|                    |                       | 999-5              |                                   |                        | 100 only               | 8-15                     |
|                    |                       | 999-7              |                                   |                        |                        |                          |
|                    |                       | 999-8              |                                   |                        |                        |                          |
| 102                | Ace                   | 999-3              | Bm                                | HH                     | 10-100                 | 12-25                    |
|                    |                       | 999-4              |                                   |                        | 10-100                 | 80-100                   |
|                    |                       | 999-5              |                                   |                        | 100 only               | 8-15                     |
|                    |                       | 999-7              |                                   |                        |                        |                          |
|                    |                       | 999-8              |                                   |                        |                        |                          |
| 102                | Clemtex               | 999-3              | Bm                                | HH                     | 10-100                 | 12-25                    |
|                    |                       | 999-4              |                                   |                        | 10-100                 | 80-100                   |
|                    |                       | 999-5              |                                   |                        | 100 only               | 8-15                     |
|                    |                       | 999-7              |                                   |                        |                        |                          |
|                    |                       | 999-8              |                                   |                        |                        |                          |
| 102                | Sulliblast            | 999-3              | Bm                                | HH                     | 10-100                 | 12-25                    |
|                    |                       | 999-4              |                                   |                        | 10-100                 | 80-100                   |
|                    |                       | 999-5              |                                   |                        | 100 only               | 8-15                     |
|                    |                       | 999-6              |                                   |                        |                        |                          |
|                    |                       |                    |                                   |                        |                        |                          |
| 103                | MSA                   | 463925             | Bm                                | HH                     | 25-300                 | 55-60                    |
|                    |                       | 463926             |                                   |                        |                        |                          |
|                    |                       | 463970             |                                   |                        |                        |                          |
|                    |                       | 463973             |                                   |                        |                        |                          |
|                    |                       | 463974             |                                   |                        |                        |                          |
|                    |                       | 463983             |                                   |                        |                        |                          |
|                    |                       | 463986             |                                   |                        |                        |                          |
|                    |                       | 463987             |                                   |                        |                        |                          |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number<br>TC-19C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                       | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet                       | Pressure<br>Range<br>psi                 |
|-------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|----------------------------------------------|------------------------------------------|
| 104                           | MSA                   | 463971<br>463972<br>463975<br>463976<br>463984<br>463985<br>463988<br>463989                                                             | Bm                                | HH                     | 15-50                                        | 16-20                                    |
| 109                           | North                 | 85100 series<br>85101* thru<br>85126*                                                                                                    | Bm                                | ON                     | 12.5-25<br>50-75<br>100-150<br>175-300       | 8- 9<br>10-11<br>12-13<br>17-18          |
| 110                           | North                 | 85200 series<br>85201* thru<br>85225*                                                                                                    | Bm                                | FF                     | 12.5<br>25-75<br>75-150<br>175-300           | 8-9<br>10 11<br>12-13<br>17-18           |
| 111                           | AO                    | 50733<br>50734                                                                                                                           | Bm                                | FF                     | 25<br>50-75<br>100-125<br>150-200<br>225-300 | 8-11<br>11-15<br>14-18<br>18-23<br>21-28 |
| 112                           | Glendale              | GR5000<br>GR6000                                                                                                                         | Bm                                | ON, FF                 | 25-300                                       | 30-35                                    |
| 113                           | MSA                   | 463277<br>463281<br>463297<br>463298<br>463299<br>463300<br>463301<br>463302<br>469718<br>469719<br>469722<br>469723<br>475148<br>475149 | Bm                                | FF                     | 15-50                                        | 10-15                                    |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to                 | Model<br>Number(s)                                                                                                  | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet                                     | Pressure<br>Range<br>psi                           |
|--------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|------------------------------------------------------------|----------------------------------------------------|
| 114                | Binks                                 | 40-140<br>40-210/230/250/270/290/310/330                                                                            | Bm                                | FF                     | 15-50                                                      | 10-15                                              |
| 115                | MSA                                   | 463293<br>463294<br>463305<br>463306<br>463307<br>463308<br>463309<br>463310                                        | Bm                                | HH                     | 15-50                                                      | 16-20                                              |
| 118                | MSA                                   | 463927<br>463928<br>463977<br>463978                                                                                | Bm                                | HH                     | 25-300                                                     | 75-100                                             |
| 120                | Defense<br>Apparel-<br>Nucon Products | HSQ-10                                                                                                              | Bm                                | HH                     | 50-100<br>100                                              | 25-35<br>35-50                                     |
| 121                | US Safety                             | 152                                                                                                                 | Bm                                | ON                     | 25-300                                                     | 35-40                                              |
| 122                | Cesco                                 | 97                                                                                                                  | Bm                                | ON                     | 25-300                                                     | 35-40                                              |
| 123                | 3M                                    | W-298/25/50/100<br>W-378/25/50/100                                                                                  | Bm                                | ON                     | 25<br>50<br>100                                            | 6-16<br>7-16<br>11-22                              |
| 124                | Safety and<br>Supply                  | RC2095ST/SC/HA<br>RC2095G-HA/SC/ST<br>RC2095R-HA/SC/ST<br>RC2095B-HA/SC/ST<br>RC2095W-HA/SC/ST<br>RC-2095GY-HA/SC/S | Bm                                | HH                     | 25-50<br>50-100<br>75-150<br>100-200<br>125-250<br>150-250 | 18-29<br>23-36<br>28-42<br>32-47<br>35-51<br>37-57 |
| 124                | Trusafe                               |                                                                                                                     |                                   |                        | 25-300                                                     |                                                    |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to           | Model<br>Number(s) | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet                   | Pressure<br>Range<br>psi         |
|--------------------|---------------------------------|--------------------|-----------------------------------|------------------------|------------------------------------------|----------------------------------|
| TC-19C-            |                                 |                    |                                   |                        |                                          |                                  |
| 125                | DeVilbiss                       | MPH-532            | Bm                                | ON                     | 15-100<br>100-300                        | 10-32<br>21-50                   |
| 126                | US Safety<br>Service            | 153                | Bm                                | FF                     | 25-300*<br>25-50**                       | 35-60<br>35-60                   |
|                    |                                 |                    |                                   |                        | *max 7 lengths w/152-25 &<br>152-50 hose |                                  |
|                    |                                 |                    |                                   |                        | **max 2 lengths of 16261 hose            |                                  |
| 127                | Cesco                           | 98                 | Bm                                | FF                     | 25-300*<br>25-50**                       | 35-60<br>35-60                   |
|                    |                                 |                    |                                   |                        | *max 7 lengths w/152-25 &<br>152-50 hose |                                  |
|                    |                                 |                    |                                   |                        | **max 2 lengths of 16261 hose            |                                  |
| 128                | Standard<br>Safety<br>Equipment | SD-5890            | Bm                                | HH                     | 25<br>50<br>75<br>100                    | 10-30<br>15-35<br>17-41<br>20-48 |
| 129                | MSA                             | 468697             | Bm                                | FF                     | 25-300                                   | 35-40                            |
| 131                | Bullard                         | 1414               | Bm                                | HH                     | 10-100<br>10-100<br>100 only             | 15-25<br>63-67<br>8-15           |
| 132                | Bullard                         | 1515               | Bm                                | HH                     | 10-100<br>10-100<br>100 only             | 15-25<br>63-67<br>8-15           |
| 133                | Racal                           | AH30               | Bm                                | HH                     | 25-300                                   | 55-70                            |
| 134                | Racal                           | AH31               | Bm                                | HH                     | 25-300                                   | 55-70                            |



## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                  | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi |
|--------------------|-----------------------|-------------------------------------|-----------------------------------|------------------------|------------------------|--------------------------|
| 135                | Racal                 | AH33                                | Bm                                | HH                     | 25-100                 | 25-100                   |
| 136                | Racal                 | AH32                                | Bm                                | HH                     | 25-100                 | 75-120                   |
| 137                | Racal                 | AC30                                | Bm                                | HH                     | 25-300                 | 55-70                    |
| 138                | Racal                 | AC32                                | Bm                                | HH                     | 25-100                 | 75-120                   |
| 139                | Racal                 | AC38                                | Bm                                | HH                     | 25-100                 | 70-115                   |
| 140                | NPO                   |                                     |                                   | HH                     | 25-50                  | 20-34*                   |
|                    |                       | SAR 100NH-AY/BY/CY/C-1Y/DY          |                                   |                        | 75-100                 | 25-45                    |
|                    |                       | SAR 100NH-AG/BG/CG/C-1G/DG          |                                   |                        | 125-175                | 30-50                    |
|                    |                       | SAR 100NH-AB/BB/CB/C-1B/DB          |                                   |                        | 200-275                | 38-55                    |
|                    |                       | SAR 100NH-AR/BR/CR/C-1R/DR          |                                   |                        |                        |                          |
|                    |                       | SAR 100NH-AC/BC/CC/C-1C/DC          |                                   |                        |                        |                          |
|                    |                       | SAR 101H-AY/BY/CY/C-1Y/DY           |                                   |                        |                        |                          |
|                    |                       | SAR 101H-AG/BG/CG/C-1G/DG           |                                   |                        |                        |                          |
|                    |                       | SAR 101H-AB/BB/CB/C-1B/DB           |                                   |                        |                        |                          |
|                    |                       | SAR 101H-AR/BR/CR/C-1R/DR           |                                   |                        |                        |                          |
|                    |                       | SAR 101H-AC/BC/CC/C-1C/DC           |                                   |                        |                        |                          |
|                    |                       | SAR 102H-AY/BY/CY/C-1Y/DY           |                                   |                        |                        |                          |
|                    |                       | SAR 102H-AG/BG/CG/C-1G/DG           |                                   |                        |                        |                          |
|                    |                       | SAR 102H-AB/BB/CB/C-1B/DB           |                                   |                        |                        |                          |
|                    |                       | SAR 102H-AR/BR/CR/C-1R/DR           |                                   |                        |                        |                          |
|                    |                       | SAR 102H-AC/BC/CC/C-1C/DC           |                                   |                        |                        |                          |
|                    |                       | SAR 100NH-1AY/AG/AB/AR/AC           |                                   |                        |                        |                          |
|                    |                       | SAR 100NH-1C-1Y/C-1G/C-1B/C-1R/C-1C |                                   |                        |                        |                          |
|                    |                       | SAR 100NH-1BY/BG/BB/BR/BC           |                                   |                        |                        |                          |
|                    |                       | SAR 100NH-1DY/DG/DB/DR/DC           |                                   |                        |                        |                          |
|                    |                       | SAR 100NH-1CY/CG/CB/CR/CC           |                                   |                        |                        |                          |
|                    |                       | SAR 100NH-2AY/AG/AB/AR/AC           |                                   |                        |                        |                          |
|                    |                       | SAR 100NH-2BY/2BG/2BB/2BR/2BC       |                                   |                        |                        |                          |
|                    |                       | SAR 100NH-2DY/DG/DB/DR/DC           |                                   |                        |                        |                          |
|                    |                       | SAR 100NH-2CY/CG/CB/CR/CC           |                                   |                        |                        |                          |
|                    |                       | SAR 100NH-2C-1Y/1G/1B/1R/1C         |                                   |                        |                        |                          |
|                    |                       | SAR 101H-1AY/AG/AB/AR/AC            |                                   |                        |                        |                          |
|                    |                       | SAR 101H-1DY/DG/DB/DR/DC            |                                   |                        |                        |                          |
|                    |                       | SAR 101H-1BY/BG/BB/BR/BC            |                                   |                        |                        |                          |
|                    |                       | SAR 101H-1CY/CG/CB/CR/CC            |                                   |                        |                        |                          |
|                    |                       | SAR 101H-1C-1Y/1G/1B/1R/1C          |                                   |                        |                        |                          |
|                    |                       | SAR 101H-2AY/AG/AB/AR/AC            |                                   |                        |                        |                          |
|                    |                       | SAR 101H-2DY/DG/DB/DR/DC            |                                   |                        |                        |                          |
|                    |                       | SAR 101H-2CY/CG/CB/CR/CC            |                                   |                        |                        |                          |

\*Max pressure 28 psig  
w/Hanson & Snap-Tite  
fittings



## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                                                                                                                                                                | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet                | Pressure<br>Range<br>psi     |
|--------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|---------------------------------------|------------------------------|
| 140                | Cont.                 | SAR 101H-2BY/BG/BB/BR/BC<br>SAR 101H-2C-1Y/1G/1B/1R/1C<br>SAR 102H-1AY/AG/AB/AR/AC<br>SAR 102H-1DY/DG/DB/DR/DC<br>SAR 102H-1BY/BG/BB/BR/BC<br>SAR 102H-1CY/CG/CB/CR/CC<br>SAR 102H-1C-1Y/1G/1B/1R/1C<br>SAR 102H-2AY/AG/AB/AR/AC<br>SAR 102H-DY/DG/DB/DR/DC<br>SAR 102H-2BV/BG/BB/BR/BC<br>SAR 102H-2CY/CG/CB/CR/CC<br>SAR 102H-2C-1Y/1G/1B/1R/1C |                                   |                        |                                       |                              |
| 141                | Racal                 | AT-30                                                                                                                                                                                                                                                                                                                                             | Bm                                | HH                     | 25-300                                | 55-70                        |
| 142                | Racal                 | AT-32                                                                                                                                                                                                                                                                                                                                             | Bm                                | HH                     | 25-100                                | 80-120                       |
| 143                | Racal                 | AT-38                                                                                                                                                                                                                                                                                                                                             | Bm                                | HH                     | 25-100                                | 70-115                       |
| 144                | Mohawk                | 1010<br>1020                                                                                                                                                                                                                                                                                                                                      | Bm                                | HH                     | 50-100                                | 25-35                        |
| 147                | Racal                 | AH38                                                                                                                                                                                                                                                                                                                                              | Bm                                | HH                     | 25-100                                | 70-115                       |
| 150                | MSA                   | 451518<br>451519                                                                                                                                                                                                                                                                                                                                  | Bm                                | HH                     | 15-50<br>50-125<br>125-200<br>200-300 | 15±3<br>20±3<br>25±3<br>35±3 |
| 151                | MSA                   | 471514<br>471515                                                                                                                                                                                                                                                                                                                                  | Bm                                | HH                     | 15-50                                 | 16-20                        |
| 152                | MSA                   | 471516<br>471517                                                                                                                                                                                                                                                                                                                                  | Bm                                | HH                     | 15-300                                | 55-60                        |
| 153                | Racal                 | AH39                                                                                                                                                                                                                                                                                                                                              | Bm                                | HH                     | 25-100                                | 70-115                       |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                             | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet                                                      | Pressure<br>Range<br>psi                                           |
|--------------------|-----------------------|--------------------------------------------------------------------------------|-----------------------------------|------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------|
| 154                | Bullard               | CC20                                                                           | N/A                               | HH                     | 10 only<br>25-100<br>125-200<br>225-300<br>100 only<br>200 only<br>300 only | 8-17<br>12-17<br>20-35<br>25-45<br>5-13<br>8-20<br>11-22           |
| 155                | Bullard               | FAM, FAM-B                                                                     | N/A                               | HH                     | 50 only<br>100 only<br>150 only<br>200 only<br>250 only<br>300 only         | 1.5-6.0<br>2.5-8.0<br>3.5-12.0<br>4.5-14.0<br>5.5-16.0<br>7.0-20.0 |
| 155                | DuPont                | M-162                                                                          | N/A                               | HH                     | 50 only<br>100 only<br>150 only<br>200 only<br>250 only<br>300 only         | 1.5-6.0<br>2.5-8.0<br>3.5-12.0<br>4.5-14.0<br>5.5-16.0<br>7.0-20.0 |
| 157*               | 3M                    | W-366-25*/50*/100*                                                             | Bm                                | FF                     | 25-50<br>75-100<br>125-200<br>225-300                                       | 15-45<br>17-50<br>22-65<br>25-75                                   |
| 159                | MSA                   | 474184                                                                         | Bm                                | HH                     | 25-300                                                                      | 55-60                                                              |
| 160                | Lancs                 | LI520Y-HA/SC/ST<br>LI520B-HA,-SC,-ST<br>LI520G-HA,-SC,-ST<br>LI520R-HA,-SC,-ST | Bm                                | HH                     | 25-100<br>50-200<br>75-300<br>100-300<br>25-300<br>150-300                  | 18-34<br>25-40<br>28-48<br>29-53<br>31-59<br>32-60                 |
| 164                | USD Corp.             | 9850-25                                                                        | Bm                                | FF                     | 25<br>50<br>75<br>100<br>150<br>200<br>250                                  | 30-60<br>35-70<br>40-85<br>45-95<br>55-110<br>65-125<br>75-125     |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                   | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet                            | Pressure<br>Range<br>psi                                       |
|--------------------|-----------------------|--------------------------------------------------------------------------------------|-----------------------------------|------------------------|---------------------------------------------------|----------------------------------------------------------------|
| 165                | USD Corp.             | 9850-40                                                                              | Bm                                | FF                     | 25<br>50<br>75<br>100<br>150<br>200<br>250        | 30-60<br>35-70<br>40-85<br>45-95<br>55-110<br>65-125<br>75-125 |
| 166                | Willson               | 4000A/B/C/D/E                                                                        | Bm                                | HH                     | 25-300                                            | 8-40                                                           |
| 168                | Binks                 | 40-360<br>40-370/380/390                                                             | Bm                                | FF                     | 15-150                                            | 20-40                                                          |
| 170                | Bullard               | M-30/31/32/33/35<br>M30V/31V/32V/33V                                                 |                                   | FF                     | 25-100<br>125-200<br>225-300<br>10-100<br>125-300 | 9-22<br>14-40<br>22-50<br>45-75<br>50-90                       |
| 171                | National<br>Draeger   | 4052017<br>4042025<br>4052034<br>4052037<br>4052040<br>4052043<br>4052044<br>4052045 | Bm                                | FF                     | 25-300                                            | 50-60                                                          |
| 172                | USD Corp.             | 9812-02<br>9812-22                                                                   | Bm                                | FF                     | 25<br>50<br>75<br>100<br>150<br>250               | 30-60<br>35-70<br>40-85<br>45-95<br>55-110<br>65-125           |
| 173                | USD Corp.             | 9813-02<br>9813-22                                                                   | Bm                                | ON                     | 25<br>50<br>75<br>100<br>150<br>250               | 30-60<br>35-70<br>40-85<br>45-95<br>55-110<br>65-125           |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number<br>TC-19C- | Approval<br>Issued to | Model<br>Number(s)                   | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet                                               | Pressure<br>Range<br>psi                           |
|-------------------------------|-----------------------|--------------------------------------|-----------------------------------|------------------------|----------------------------------------------------------------------|----------------------------------------------------|
| 176                           | MSA                   | 476056<br>478327                     | Bm                                | HH                     | 15-50                                                                | 16-20                                              |
| 177                           | MSA                   | 474054<br>478326                     | Bm                                | HH                     | 25-300                                                               | 55-60                                              |
| 179                           | Racal                 | FP30-7                               | Bm                                | FF                     | 25-300                                                               | 55-70                                              |
| 180                           | Racal                 | FP30-8                               | Bm                                | ON                     | 25-300                                                               | 55-70                                              |
| 181                           | Racal                 | FP32-7                               | Bm                                | FF                     | 25-100                                                               | 75-120                                             |
| 182                           | Racal                 | FP38-7                               | Bm                                | FF                     | 25-100                                                               | 70-115                                             |
| 183                           | Racal                 | FP32-8                               | Bm                                | ON                     | 25-100                                                               | 75-120                                             |
| 184                           | Racal                 | FP38-8                               | Bm                                | ON                     | 25-100                                                               | 70-115                                             |
| 185                           | Racal                 | VH30                                 | Bm                                | HH                     | 25-300                                                               | 55-70                                              |
| 186                           | Racal                 | VH32                                 | Bm                                | HH                     | 25-100                                                               | 75-120                                             |
| 187                           | Racal                 | VH38                                 | Bm                                | HH                     | 25-100                                                               | 75-115                                             |
| 188                           | Trusafe               | WEI-HA<br>WEI-SC<br>WEI-ST<br>WEI-SS | Bm                                | HH                     | 25-50<br>50-100<br>125-250<br>150-250<br>100-200<br>75-150<br>25-300 | 20-35<br>24-43<br>37-61<br>38-66<br>34-56<br>30-50 |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                   | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet                                                                  | Pressure<br>Range<br>psi                           |
|--------------------|-----------------------|--------------------------------------------------------------------------------------|-----------------------------------|------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------|
| 190                | Trusafe               | ACII-HA<br>ACII-SC<br>ACII-ST<br>ACII-SS<br>WEII-HA<br>WEII-SC<br>WEII-ST<br>WEII-SS | Bm                                | HH                     | 25-50<br>50-100<br>75-150<br>100-200<br>125-250<br>150-250<br>25-300                    | 20-35<br>24-43<br>30-50<br>34-56<br>37-61<br>38-66 |
| 191                | US Safety             | 804-DI<br>804-DN                                                                     | Bm                                | HH                     | <u>Without Valve</u><br>25-50 15-30<br>75-125 25-45<br>150-200 30-60<br>225-300 40-70   |                                                    |
|                    |                       |                                                                                      |                                   |                        | <u>W/Control Valve</u><br>25-50 25-30<br>75-125 30-40<br>150-200 35-50<br>225-300 40-60 |                                                    |
| 192                | U.S. Safety           | 805-DI<br>805-DN                                                                     | Bm                                | HH                     | 25-300                                                                                  | 85-100                                             |
| 193                | U.S. Safety           | 802-SL<br>802-WL<br>802-SN<br>802-WN                                                 | Bm                                | HH                     | <u>W/O Valve</u><br>25-50 15-30<br>75-125 25-45<br>150-200 30-60<br>225-300 40-70       |                                                    |
|                    |                       |                                                                                      |                                   |                        | <u>W/Control Valve</u><br>25-50 25-30<br>75-125 30-40<br>150-200 35-50<br>225-300 40-60 |                                                    |
| 196                | North                 | 85300                                                                                | Bm                                | HH                     | 12.5-25<br>50-75<br>100-150<br>175-200<br>225-250<br>275-300                            | 4-12<br>6-14<br>7-16<br>9-18<br>11-20<br>12-22     |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                  | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet                                             | Pressure<br>Range<br>psi                                 |
|--------------------|-----------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|--------------------------------------------------------------------|----------------------------------------------------------|
| 196                | Cont.                 |                                                                                                     |                                   |                        | 12.5<br>25<br>50<br>100<br>150<br>200<br>250                       | 6-15<br>8-17<br>9-19<br>15-30<br>20-35<br>25-45<br>28-50 |
| 197                | U.S. Safety           | 803-SL<br>803-WL<br>803-SN<br>803-WN                                                                | Bm                                | HH                     | 25-300                                                             | 85-100                                                   |
| 199                | 3M                    | W-366-25<br>W-366-50<br>W-366-100                                                                   | Bm                                | FF                     | 25-50<br>75-100<br>125-200<br>225-300                              | 15-45<br>17-50<br>22-60<br>25-75                         |
| 200                | Neoterik              | NP1740-1<br>thru -13<br><br>NP1750-1 thru -13<br><br>NP1760-1 thru -13                              | Bm                                | HH                     | 25-100<br><br>(NP1680)<br>25-300<br>(NP1681)<br>25-300<br>(NP1682) | 12-14<br><br>25-30<br>65-75                              |
| 201                | Pulmosan              | 20330                                                                                               | Bm                                | HH                     | 15-25<br>50<br>100                                                 | 7-9<br>9-12<br>7-10                                      |
| 202                | Bullard               | M-40-35<br>M-40-30<br>M-40-32<br>M-40-33<br>M-40-31<br>M-40-30V<br>M-40-32V<br>M-40-31V<br>M-40-33V | Bm                                | FF                     | 25-300<br>50-150<br>200-300                                        | 35-70<br>6-25<br>8-30                                    |



## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                             | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet                                                        | Pressure<br>Range<br>psi                                                                                                                                                                                                                                                                          |
|--------------------|-----------------------|------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 202                | Dupont                | M-188                                                                                          | Bm                                | FF                     | 25-300<br>50-150<br>200-300                                                   | 35-70<br>6-25<br>8-30                                                                                                                                                                                                                                                                             |
| 203                | Safety<br>Products    | AF0306                                                                                         | Bm                                | HH                     | 25/35 ft                                                                      | 55-90                                                                                                                                                                                                                                                                                             |
| 204                | North                 | 85000                                                                                          | Bm                                | FF                     | 12.5-50<br>75-150<br>175-300                                                  | 5-15<br>9-24<br>15-35                                                                                                                                                                                                                                                                             |
| 206                | AO                    | R7800<br>S7800                                                                                 | Bm<br>Bm                          | FF<br>FF               | 25<br>50<br>75<br>100<br>125<br>150<br>175<br>200<br>225<br>250<br>275<br>300 | 8-29<br>11-35<br>12-39<br>12-39<br>13-42<br>14-46<br>15-50<br>16-53<br>18-56<br>19-60<br>20-61<br>21-62                                                                                                                                                                                           |
| 207                | US Safety             | Series 97LP                                                                                    | Bm                                | ON                     | 50<br>100<br>150<br>200<br>250<br>300                                         | 1.5-7<br>2.5-11<br>3.5-15<br>4.5-18<br>5.5-21<br>6.5-24                                                                                                                                                                                                                                           |
| 208                | Willson               | 6370-A(S)<br>-B(S)<br>-C(S)<br>-D(S)<br>-E(S)<br>6370-A(M)<br>-B(M)<br>-C(M)<br>-D(M)<br>-E(M) | Bm                                | ON                     | 25<br>50<br>75<br>100<br>125<br>150<br>175<br>200<br>225<br>250               | <u>R714A/R714B/R714C/R714D</u><br>5-18 5-20 8-20 5-30<br>6-25 6-25 10-75 6-20<br>8-25 8-25 12-30 8-25<br>8-30 10-35 14-35 10-35<br>14-38 16-40 16-40 16-40<br>16-40 20-45 20-45 20-45<br>20-42 24-50 24-50 24-50<br>22-44 28-55 28-55 28-55<br>24-46 32-60 32-60 32-60<br>26-48 36-60 36-65 36-65 |

## SAR TYPE C CONTINUOUS FLOW

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s) | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi |              |              |              |              |
|--------------------|-----------------------|--------------------|-----------------------------------|------------------------|------------------------|--------------------------|--------------|--------------|--------------|--------------|
| 208 Cont.          |                       | 6370-A(L)          |                                   |                        | 300                    | 30-50                    | 40-65        | 40-65        | 40-65        |              |
|                    |                       | -B(L)              |                                   |                        | 50                     | 4-15                     | 4-30         | 6-30         | 4-30         | 2-11         |
|                    |                       | -C(L)              |                                   |                        | 100                    | 5-19                     | 5-30         | 8-30         | 5-30         | 3-17         |
|                    |                       | -D(L)              |                                   |                        | 25                     | 5-18                     | 6-35         | 8-35         | 7-35         | 3-24         |
|                    |                       | -E(L)              |                                   |                        | 50                     | 5-35                     | 6-40         | 8-42         | 7-42         | 5-30         |
| <hr/>              |                       |                    |                                   |                        |                        |                          |              |              |              |              |
| 209                | Willson               | 6470-AL-A thru E   | Bm                                | FF                     | 25                     | 6-18                     | 6-20         | 6-20         | 6-20         |              |
|                    |                       | S6470-AL-A thru E  |                                   |                        | 50                     | 6-22                     | 8-25         | 8-25         | 8-25         |              |
|                    |                       | 6570-AL-A thru E   |                                   |                        | 75                     | 8-28                     | 10-30        | 12-30        | 12-30        |              |
|                    |                       | S6570-AL-A thru E  |                                   |                        | 100                    | 10-30                    | 10-35        | 14-35        | 14-35        |              |
|                    |                       |                    |                                   |                        | 125                    | 16-38                    | 18-40        | 18-40        | 18-40        |              |
|                    |                       |                    |                                   |                        | 150                    | 18-40                    | 22-45        | 22-45        | 22-45        |              |
|                    |                       |                    |                                   |                        | 175                    | 22-42                    | 26-50        | 26-50        | 26-50        |              |
|                    |                       |                    |                                   |                        | 200                    | 24-44                    | 30-55        | 30-55        | 30-55        |              |
|                    |                       |                    |                                   |                        | 225                    | 26-46                    | 34-60        | 34-60        | 34-60        |              |
|                    |                       |                    |                                   |                        | 250                    | 28-48                    | 36-60        | 36-60        | 36-60        |              |
|                    |                       |                    |                                   |                        | 300                    | 30-50                    | 40-65        | 40-65        | 40-65        |              |
|                    |                       |                    |                                   |                        |                        | <u>R814A</u>             | <u>R814B</u> | <u>R814C</u> | <u>R814D</u> | <u>R814E</u> |
|                    |                       |                    |                                   |                        | 50                     | 2-15                     | 4-25         | 4-18         | 4-33         | 2-12         |
|                    |                       |                    |                                   |                        | 100                    | 3-20                     | 5-30         | 5-34         | 5-34         | 3-15         |
|                    |                       |                    |                                   |                        |                        | <u>R825A</u>             | <u>R825B</u> | <u>R825C</u> | <u>R825D</u> | <u>R825E</u> |
|                    |                       |                    |                                   |                        | 25                     | 4-30                     | 5-30         | 6-35         | 5-35         | 4-25         |
|                    |                       |                    |                                   |                        | 50                     | 5-35                     | 7-40         | 7-40         | 7-40         | 5-30         |



## 2. Type C Pressure Demand

### Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

### Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths and pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

C. Supplied Air Respirators  
2. Type C Pressure Demand

| Approval<br>Number<br>TC-19C- | Approval<br>Issued to  | Model<br>Number(s)                              | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi |
|-------------------------------|------------------------|-------------------------------------------------|-----------------------------------|------------------------|------------------------|--------------------------|
| 67                            | USD Corp.              | 9011-13<br>9811-13/16                           | Fm                                | FF                     | 4-250                  | 50-125                   |
| 68                            | USD Corp.              | 9011-15<br>9811-15/17                           | Fm                                | FF                     | 4-250                  | 50-125                   |
| 74                            | Scott                  | 801548 Series*<br>801548-02/-03/-06/-07         | Fm                                | FF                     | 3-250                  | 60-125                   |
| 90                            | Robertshaw<br>Controls | 900-002-264-01/02/03/04/11/12/13/14             | Fm                                | ON,FF                  | 25-250                 | 50-125                   |
| 93                            | MSA                    | 89104<br>461669<br>461699<br>461700             | Bm                                | FF                     | 25-300                 | 80-100                   |
| 98                            | Scott                  | 802280-03<br>802280-04/07/08/11/12/15/16        | Fm                                | ON                     | 3-250                  | 60-125                   |
| 145                           | Willson                | 1915*<br>1915A/B/C/D                            | Bm                                | ON                     | 25-250                 | 50-125                   |
| 146                           | Willson                | 1950*<br>1960*<br>1950/A/B/C/D<br>1960/A/B/C/D  | Bm                                | FF                     | 25-250                 | 50-125                   |
| 149                           | National<br>Draeger    | 4059081 thru<br>4059107<br>4059104 thru 4509111 | Fm                                | FF                     | 25-300                 | 85-120                   |
| 156                           | AGA                    | 336-890-034<br>336-890-043                      | Bm                                | FF                     | 25-200                 | 60-125                   |

## SAR TYPE C PRESSURE DEMAND

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                         | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet              | Pressure<br>Range<br>psi                             |
|--------------------|-----------------------|------------------------------------------------------------|-----------------------------------|------------------------|-------------------------------------|------------------------------------------------------|
| TC-19C-            |                       |                                                            |                                   |                        |                                     |                                                      |
| 158                | MSA                   | 473998<br>473457<br>473464<br>474020<br>475209 thru 475224 | Bm                                | HH                     | 25-300                              | 55-85                                                |
| 167                | Globe                 | 2939-1<br>2939-2/3/4                                       | Bm                                | FF                     | 25-200                              | 60-75                                                |
| 169                | Binks                 | 40-525<br>40-526<br>40-340<br>40-395                       | Bm                                | FF                     | 15-300<br>15-300<br>15-300          | 65-85<br>65-85<br>65-85                              |
| 174                | USD Corp.             | 9815-02<br>9815-22                                         | Bm                                | FF                     | 25<br>50<br>75<br>100<br>150<br>250 | 30-60<br>35-70<br>40-85<br>45-95<br>55-110<br>65-125 |
| 175                | USD Corp.             | 9816-02<br>9816-22                                         | Bm                                | FF                     | 25<br>50<br>75<br>100<br>150<br>250 | 30-60<br>35-70<br>40-85<br>45-95<br>55-110<br>65-125 |
| 189                | ISI                   | 707.135.00<br>707.135.01<br>707.135.02<br>707.135.03       | Bm                                | FF                     | 25-300                              | 80-120                                               |
| 194                | Dual Safe             | DS-100-0                                                   | Bm                                | FF                     | 50-250                              | 50-125                                               |
| 195                | North                 | 85400                                                      | Bm                                | FF                     | 12.5-300                            | 78-80                                                |
| 198                | North                 | 85500A                                                     | Bm                                | FF                     | 12.5-300                            | 78-80                                                |

### 3. Type C Demand

#### Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

#### Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths and pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

C. Supplied Air Respirators  
3. Type C Demand

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                   | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi |
|--------------------|-----------------------|------------------------------------------------------|-----------------------------------|------------------------|------------------------|--------------------------|
| 65                 | USD Corp.             | 9011-12<br>9811-12                                   | Fm                                | FF                     | 4-250                  | 50-125                   |
| 66                 | USD Corp.             | 9011-14<br>9811-14                                   | Fm                                | FF                     | 4-250                  | 50-125                   |
| 75                 | MSA                   | 84283<br>93928<br>94988<br>46539<br>457164<br>457165 | Bm                                | ON, FF                 | 25-300                 | 50-125                   |
| 91                 | MSA                   | 457157<br>93224<br>93225<br>461666                   | Fm                                | ON, FF                 | 25-300                 | 50-90                    |
| 205                | MSA                   | 480761 thru<br>480772 and<br>480778 thru<br>480781   |                                   |                        | 15-300                 | 50-80                    |

#### 4. Type CE Continuous Flow Abrasive Blasting

##### Approval

Approved for abrasive blasting and for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

##### Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths and pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

## C. Supplied Air Respirators

## 4. Type CE Continuous Flow Abrasive Blasting

| Approval<br>Number | Approval<br>Issued to                                                                        | Model<br>Number(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet       | Pressure<br>Range<br>psi         |
|--------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|------------------------------|----------------------------------|
| 64                 | Cesco                                                                                        | PI-800-AA<br>PI-800-/DA/NA/AAHF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Bm                                | HH                     | 15-50<br>75-100              | 6-17<br>7-20                     |
| 64                 | US Safety                                                                                    | PI-800-AA<br>PI-800-DA/-NA/-AAHF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Bm                                | HH                     | 15-50<br>75-100              | 6-17<br>7-20                     |
| 64                 | Wheeler<br>Protective<br>Apparel                                                             | 17032<br>17032A<br>17036<br>17036H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Bm                                | HH                     | 15-50<br>75-100              | 6-17<br>7-20                     |
| 69                 | 3M                                                                                           | W-280-100/50/25<br>W-283-100/50/25*<br>W-286-100/50/25<br>W-292-100/50/25<br>W-308-100/50/25<br>W-313-100/50/25<br>W-314-100/50/25<br>W-318-100/50/25<br>W-321-100*S/M/L<br>W-321-25*S/M/L<br>W-321-50*S/M/L<br>W-329-100/50/25<br>W-332-100/50/25<br>W-335-100/50/25<br>W-338-100/50/25<br>W-346-100/50/25<br>W-352-100/50/25<br>W-368-25/50/100<br>W-371-25/50/100<br>W-810-100/50/25<br>W-840-100/50/25<br>W-856-100L/M/S*<br>W-856-25L/M/S<br>W-856-50L/M/S<br>W-858-100/50/25<br>W-870-100/50/25<br>W-858-100/50/25 | Bm                                | HH                     | 25 & 50<br>100<br>200<br>300 | 25-35<br>30-45<br>35-60<br>40-75 |
| 69                 | Pauli & Griffin*<br>Clemco*<br>Bowen Tools*<br>Empire Abrasive*<br>Kelco Sales*<br>Pangborn* |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |                        |                              |                                  |



## SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)    | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi |
|--------------------|-----------------------|-----------------------|-----------------------------------|------------------------|------------------------|--------------------------|
| 70                 | 3M                    |                       | Bm                                | HH                     | 25-100                 | 60-80                    |
|                    |                       | W-281-100/50/25       |                                   |                        |                        |                          |
|                    |                       | W-284-100/50/25*      |                                   |                        |                        |                          |
|                    |                       | W-287-100/50/25       |                                   |                        |                        |                          |
|                    |                       | W-293-100/50/25*      |                                   |                        |                        |                          |
|                    |                       | W-310-100/50/25       |                                   |                        |                        |                          |
|                    |                       | W-311-100/50/25       |                                   |                        |                        |                          |
|                    |                       | W-315-100/50/25       |                                   |                        |                        |                          |
|                    |                       | W-317-100/50/25       |                                   |                        |                        |                          |
|                    |                       | W-322-100/50/25L      |                                   |                        |                        |                          |
|                    |                       | W-322-100/50/25M      |                                   |                        |                        |                          |
|                    |                       | W-322-100S*/50S*/25S* |                                   |                        |                        |                          |
|                    |                       | W-328-100/50/25       |                                   |                        |                        |                          |
|                    |                       | W-330-100/50/25       |                                   |                        |                        |                          |
|                    |                       | W-333-100/50/25       |                                   |                        |                        |                          |
|                    |                       | W-336-100/50/25       |                                   |                        |                        |                          |
|                    |                       | W-347-25/50/100       |                                   |                        |                        |                          |
|                    |                       | W-354-25/100/50       |                                   |                        |                        |                          |
|                    |                       | W-369-25/50/100       |                                   |                        |                        |                          |
|                    |                       | W-370-25/50/100       |                                   |                        |                        |                          |
|                    |                       | W-372-25/50/100       |                                   |                        |                        |                          |
|                    |                       | W-820-100/50/25       |                                   |                        |                        |                          |
|                    |                       | W-880-100/50/25       |                                   |                        |                        |                          |
|                    |                       | W-881-100/50/25L/M    |                                   |                        |                        |                          |
|                    |                       | W-881-100/50/25S*     |                                   |                        |                        |                          |
|                    |                       | W-888-100/50/25*      |                                   |                        |                        |                          |
|                    |                       | W-890-100/50/25       |                                   |                        |                        |                          |
|                    | Pauli & Griffin       |                       |                                   |                        |                        |                          |
|                    | Clemco                |                       |                                   |                        |                        |                          |
|                    | Bowen Tools           |                       |                                   |                        |                        |                          |
|                    | Empire Abrasive       |                       |                                   |                        |                        |                          |
|                    | Kelco Sales           |                       |                                   |                        |                        |                          |
|                    | Pangborn              |                       |                                   |                        |                        |                          |

|    |       |            |    |    |       |       |
|----|-------|------------|----|----|-------|-------|
| 79 | Encon | 6400*      | Bm | HH | 25-50 | 70-90 |
|    |       | 01-6401-31 |    |    |       |       |
|    |       | 01-6401-32 |    |    |       |       |
|    |       | 01-6401-33 |    |    |       |       |
|    |       | 01-6401-34 |    |    |       |       |
|    |       | 01-6401-35 |    |    |       |       |
|    |       | 01-6401-36 |    |    |       |       |
|    |       | 01-6451-31 |    |    |       |       |
|    |       | 01-6451-32 |    |    |       |       |
|    |       | 01-6451-33 |    |    |       |       |
|    |       | 01-6451-34 |    |    |       |       |
|    |       | 01-6451-35 |    |    |       |       |
|    |       | 01-6451-36 |    |    |       |       |



## SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                        | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet       | Pressure<br>Range<br>psi |
|--------------------|-----------------------|-------------------------------------------------------------------------------------------|-----------------------------------|------------------------|------------------------------|--------------------------|
| TC-19C-            |                       |                                                                                           |                                   |                        |                              |                          |
| 79                 | Schmidt               | 6400*<br>01-6401-37<br>01-6401-38<br>01-6401-39<br>01-6401-40<br>01-6401-41<br>01-6401-42 | Bm                                | HH                     | 25-50                        | 70-90                    |
| 81                 | MSA                   | 460907<br>460908<br>460909<br>460910<br>461713<br>461714<br>461715<br>461716              | Bm                                | HH                     | 25-300                       | 55-60                    |
| 84                 | Bullard               | 77<br>46                                                                                  | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                 | Anderson              | 77<br>46                                                                                  | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                 | Bowen                 | 77<br>46                                                                                  | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                 | Quaker<br>State       | 77<br>46                                                                                  | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                 | Pauli and<br>Griffin  | 77<br>46                                                                                  | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                 | Empire                | 77<br>46                                                                                  | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |

## SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

| Approval<br>Number<br>TC-19C- | Approval<br>Issued to | Model<br>Number(s) | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet       | Pressure<br>Range<br>psi |
|-------------------------------|-----------------------|--------------------|-----------------------------------|------------------------|------------------------------|--------------------------|
| 84                            | Kelco                 | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | Marthens              | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | Ace                   | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | Clemtex               | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | A-BEC                 | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | Schmidt               | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | Matfer                | 77<br>46           | Bm                                | HH                     | 25-200<br>25-300<br>100 only | 80-95<br>80-95<br>8-15   |
| 84                            | Air<br>Components     | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | Porter<br>Warner      | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |
| 84                            | Clark Sand            | 77<br>46           | Bm                                | HH                     | 25-200<br>100 only<br>25-300 | 80-95<br>8-15<br>80-95   |

## SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

| Approval<br>Number<br>TC-19C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet        | Pressure<br>Range<br>psi |
|-------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|-------------------------------|--------------------------|
| 84                            | Sulliblast            | 77<br>46                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Bm                                | HH                     | 25-200<br>100 only<br>25-300  | 80-95<br>8-15<br>80-95   |
| 84                            | Key<br>Houston        | 77<br>46                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Bm                                | HH                     | 25-200<br>100 only<br>25-300  | 80-95<br>8-15<br>80-95   |
| 85                            | Clemco                | 46 (PCE)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Bm                                | HH                     | 25-200<br>100 only            | 80-95<br>8-15            |
| 86                            | AO                    | R6099<br>R5099<br>S5099<br>S6099                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Bm                                | ON                     | 12.5-75<br>100-175<br>200-300 | 7-15<br>13-25<br>18-35   |
| 87                            | 3M                    | W-270-100/50/25<br>W-271-100/50/25<br>W-272-100/50/25<br>W-274-100/50/25L/M/<br>W-274-100/50/25S*<br>W-277-S/M/L*<br>W-282-100/50/25<br>W-285-100/50/25*<br>W-288-100/50/25<br>W-294-100/50/25*<br>W-309-100/50/25<br>W-312-100/50/25<br>W-319-100/50/25<br>W-320-100/50/25M/L<br>W-320-100/50/25S*<br>W-323-100/50/25<br>W-327-100/50/25<br>W-331-100/50/25<br>W-334-100/50/25<br>W-337-25/50/100<br>W-348-25/50/100<br>W-353-25/50/100<br>W-373-25/50/100<br><br>Pangborn*<br>Pauli&Griffin*<br>Bowen Tools*<br>Clemco*<br>Empire Abrasive*<br>Kelco* | Bm                                | HH                     | 25-100                        | 60-70                    |

## SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

| Approval<br>Number<br>TC-19C- | Approval<br>Issued to            | Model<br>Number(s)                                 | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet       | Pressure<br>Range<br>psi |
|-------------------------------|----------------------------------|----------------------------------------------------|-----------------------------------|------------------------|------------------------------|--------------------------|
| 96                            | Cesco                            | 801-AA/DA/NA/AAHF                                  | Bm                                | HH                     | 15-100                       | 60-100                   |
| 96                            | US Safety                        | 801-AA/DA/NA/AAHF                                  | Bm                                | HH                     | 15-100                       | 60-100                   |
| 96                            | Wheeler<br>Protective<br>Apparel | 17232<br>17232H<br>17236<br>17236H                 | Bm                                | HH                     | 15-100                       | 60-100                   |
| 99                            | Pulmosan                         | 20009                                              | Bm                                | HH                     | 15-50                        | 17-20                    |
| 100                           | Pulmosan                         | 20027                                              | Bm                                | HH                     | 15-50                        | 17-20                    |
| 102                           | Bullard                          | 999-3<br>999-4<br>999-5<br>999-6<br>999-7<br>999-8 | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Anderson                         | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Bowen                            | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Pauli &<br>Griffin               | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |

## SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

| Approval<br>Number<br>TC-19C- | Approval<br>Issued to | Model<br>Number(s)                                 | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet       | Pressure<br>Range<br>psi |
|-------------------------------|-----------------------|----------------------------------------------------|-----------------------------------|------------------------|------------------------------|--------------------------|
| 102                           | Empire                | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Deane                 | 999-7<br>999-8                                     | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Kelco                 | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Titan                 | 999-3<br>999-4<br>999-5<br>999-6<br>999-7<br>999-8 | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | A-BEC                 | 999-3<br>999-4<br>999-5<br>999-6                   | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Schmidt               | 999-3<br>999-4<br>999-5<br>999-6                   | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Key<br>Houston        | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |
| 102                           | Clemco                | 999-3<br>999-4<br>999-5<br>999-7<br>999-8          | Bm                                | HH                     | 10-100<br>10-100<br>100 only | 12-25<br>80-100<br>8-15  |

## SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

| Approval<br>Number | Approval          | Model     | Regulator            | Face-         | Hose           | Pressure     |
|--------------------|-------------------|-----------|----------------------|---------------|----------------|--------------|
| TC-19C-            | Issued to         | Number(s) | or Valve<br>Location | piece<br>Type | Length<br>feet | Range<br>psi |
| 102                | Binks             | 999-3     | Bm                   | HH            | 10-100         | 12-25        |
|                    |                   | 999-4     |                      |               | 10-100         | 80-100       |
|                    |                   | 999-5     |                      |               | 100 only       | 8-15         |
|                    |                   | 999-7     |                      |               |                |              |
|                    |                   | 999-8     |                      |               |                |              |
| 102                | Air<br>Components | 999-3     | Bm                   | HH            | 10-100         | 12-25        |
|                    |                   | 999-4     |                      |               | 10-100         | 80-100       |
|                    |                   | 999-5     |                      |               | 100 only       | 8-15         |
|                    |                   | 999-7     |                      |               |                |              |
|                    |                   | 999-8     |                      |               |                |              |
| 102                | Ace               | 999-3     | Bm                   | HH            | 10-100         | 12-25        |
|                    |                   | 999-4     |                      |               | 10-100         | 80-100       |
|                    |                   | 999-5     |                      |               | 100 only       | 8-15         |
|                    |                   | 999-7     |                      |               |                |              |
|                    |                   | 999-8     |                      |               |                |              |
| 102                | Clemtex           | 999-3     | Bm                   | HH            | 10-100         | 12-25        |
|                    |                   | 999-4     |                      |               | 10-100         | 80-100       |
|                    |                   | 999-5     |                      |               | 100 only       | 8-15         |
|                    |                   | 999-7     |                      |               |                |              |
|                    |                   | 999-8     |                      |               |                |              |
| 102                | Sulliblast        | 999-3     | Bm                   | HH            | 10-100         | 12-25        |
|                    |                   | 999-4     |                      |               | 10-100         | 80-100       |
|                    |                   | 999-5     |                      |               | 100 only       | 8-15         |
|                    |                   | 999-6     |                      |               |                |              |
|                    |                   |           |                      |               |                |              |
| 105                | MSA               | 463939    | Bm                   | HH            | 25-300         | 55-60        |
|                    |                   | 463979    |                      |               |                |              |
| 106                | MSA               | 463980    | Bm                   | HH            | 15-50          | 16-20        |
|                    |                   | 463981    |                      |               |                |              |
| 107                | MSA               | 463929    | Bm                   | HH            | 25-300         | 55-60        |
|                    |                   | 463930    |                      |               |                |              |
|                    |                   | 463959    |                      |               |                |              |
|                    |                   | 463962    |                      |               |                |              |
|                    |                   | 463963    |                      |               |                |              |
|                    |                   | 463967    |                      |               |                |              |



## SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                     | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet        | Pressure<br>Range<br>psi |
|--------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|-------------------------------|--------------------------|
| TC-19C-            |                       |                                                                                                                                                                                                        |                                   |                        |                               |                          |
| 108                | MSA                   | 463960<br>463961<br>463964<br>463965<br>463968<br>463969                                                                                                                                               | Bm                                | HH                     | 15-50                         | 16-20                    |
| 116                | MSA                   | 463291<br>463292<br>463295<br>463296<br>463303<br>463304<br>463311<br>463312                                                                                                                           | Bm                                | HH                     | 15-50                         | 16-20                    |
| 117                | MSA                   | 463924<br>463982                                                                                                                                                                                       | Bm                                | HH                     | 25-300                        | 75-100                   |
| 119                | MSA                   | 463935<br>463956<br>463957<br>463958<br>463936<br>463966                                                                                                                                               | Bm                                | HH                     | 75-300                        | 75-100                   |
| 130                | Clemco                | 04400*<br>04401*<br>04402*<br>10505<br>10508 thru 10524                                                                                                                                                | Bm                                | HH                     | 10-200                        | 85-45                    |
| 161                | MSA                   | 466716<br>468720<br>473297<br>473299<br>480851/853/855/<br>857/859/861/863/<br>865/867/869/871/<br>873/875/877/879/<br>881/883/885/887/<br>889/891/893/895/<br>897/899/901/903/<br>905/907/909/911/913 | Bm                                | FF                     | 100-300<br>125-300<br>150-300 | 29-53<br>31-59<br>32-60  |

## SAR TYPE CE CONTINUOUS FLOW ABRASIVE BLASTING

| Approval<br>Number<br>TC-19C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                                 | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type                         | Hose<br>Length<br>feet                                 | Pressure<br>Range<br>psi                                        |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------|
| 162                           | MSA                   | 468718<br>458722<br>473298<br>473300<br>480852/854/856/<br>858/860/862/864/<br>866/868/870/872/<br>874/876/878/880/<br>882/884/886/888/<br>890/892/894/896/<br>898/900/902/904/<br>906/908/910/912/914             | Bm                                | FF                                             | 15-300                                                 | 35-40                                                           |
| 163                           | 3M                    | W356-25/50/100<br>W357-25/50/100<br>W358-25/50/100<br>W360-25L/50L/100L<br>W360-25M/50M/100M<br>W361-25/50/100<br>W362-25/50/100<br>W364-25/50/100<br>W374-25/50/100<br>W375-25/50/100<br><br>W391<br>W395<br>W399 | Bm                                | HH<br><br><br><br><br><br><br><br>W374<br>only | 25<br><br>50<br>100<br><br><br><br><br>25<br>50<br>100 | 4-17<br><br>4-17<br>4-17<br><br><br><br><br>4-9<br>5-11<br>6-15 |
| 170                           | Bullard               | M-30/31/32/33/35<br>M30V/31V/32V/33V                                                                                                                                                                               |                                   | FF                                             | 25-100<br>125-200<br>225-300<br>10-100<br>125-300      | 9-22<br>14-40<br>22-50<br>45-75<br>50-90                        |
| 178                           | MSA                   | 474263 thru<br>474266<br>480915 thru 480946                                                                                                                                                                        | Bm                                | FF                                             | 15-300                                                 | 60-80                                                           |



5. Type A

Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths, RPM, or pressure ranges specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow manufacturer's instructions for fitting the facepiece, for location of the blower, for preventing entanglement and fouling of the hose, or operation of the blower and for caring of the respirator while not in use.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

C. Supplied Air Respirators

5. Type A

| Approval<br>Number<br>TC-19C- | Approval<br>Issued to | Model<br>Number(s)    | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi |
|-------------------------------|-----------------------|-----------------------|-----------------------------------|------------------------|------------------------|--------------------------|
| 101                           | MSA                   | 463018 thru<br>463025 | N/A                               | FF                     | 50-250                 | N/A                      |
| 148                           | MSA                   | 466033                | N/A                               | FF                     | 50-250                 | N/A                      |

6. Type B

Approval

Approved for respiratory protection against atmospheres not immediately dangerous to life or health. Respirator only approved when used with respirable air.

Limitations

Not for use in atmospheres containing less than 19.5 percent oxygen.

Use only the hose lengths specified on the approval label.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for locating the intake of the air supply hose.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

C. Supplied Air Respirators  
 6. Type B

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s) | Regulator<br>or Valve<br>Location | Face-<br>piece<br>Type | Hose<br>Length<br>feet | Pressure<br>Range<br>psi |
|--------------------|-----------------------|--------------------|-----------------------------------|------------------------|------------------------|--------------------------|
| TC-19C-            |                       |                    |                                   |                        |                        |                          |
| 77                 | MSA                   | 457623             | N/A                               | FF                     | Up to<br>75            | N/A                      |

PARTICULATE RESPIRATORS (21C)

D. Particulate Respirators

1. Single Use

Approval

Approved for respiratory protection against pneumoconiosis- and fibrosis-producing dusts and mists.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Follow the manufacturer's instruction for replacing respirators.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

## D. Particulate Respirators

## 1. Single Use

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)       | Other<br>Approvals |
|-------------------------------|-----------------------|--------------------------|--------------------|
| 132                           | 3M                    | 6983<br>8710<br>8550     | D,M,Z              |
| 143                           | Willson               | 1400*                    |                    |
| 170A                          | North                 | 7170                     |                    |
| 173                           | 3M                    | 8800<br>8530             | D,M,Z              |
| 174                           | Binks                 | 40-150*                  |                    |
| 195                           | Glendale              | (SU-1)<br>GR-500         |                    |
| 214                           | Willson               | 1410<br>CP1410<br>MM1410 | D,M                |
| 215                           | Binks                 | 40-145                   | D,M                |
| 238                           | Glendale              | GR555                    | D                  |
| 271                           | Gerson                | 1710                     | D,M,Z              |
| 292                           | Zee Med. Prod.        | 2303                     | D,M,Z              |
| 293                           | Safety Supply         | Respair 200              | D,M,Z              |
| 315                           | Air-Tek               | AT-100                   | D,M                |
| 347                           | North                 | 7175                     | D,M                |
| 364                           | Balkamp               | 763-2271                 | D,M                |

## 2. Dusts and Mists

### Approval

Approved for respiratory protection against dusts and mists having an exposure limit measured as a time weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow manufacturer's instructions for changing filters and replacing respirators.

Particulate respirators may also be approved for asbestos containing dusts and mists as indicated in the last column.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.



D. Particulate Respirators  
2. Dusts and Mists

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 132                           | 3M                    | 6983<br>8550<br>8710                                                                                                 | Su, ON                              | 1                    | Z, S               |
| 133                           | MSA                   | 459440<br>466252 thru 466254<br>466530<br>466531<br>476729 thru 476731<br>479605<br>479606<br>479608 thru 479613     | Rp, Fm, ON                          | 2                    |                    |
| 138                           | MSA                   | 96000<br>457344                                                                                                      | Rp, Fm, ON                          | 1                    | Z                  |
| 139                           | Willson               | 560                                                                                                                  | Rp, Fm, ON                          | 1                    |                    |
| 140                           | Willson               | 1210<br>1210R<br>1210S<br>1210SR<br>1210SS<br>1210SSS<br>S1210<br>S1210R<br>S1210S<br>S1210SR<br>S1210SS<br>S1210SSS | Rp, Fm, ON                          | 2                    |                    |
| 144                           | AO                    | R4030<br>S4030<br>R5030<br>S5030<br>R5530<br>S5530<br>R6030<br>S6030                                                 | Rp, Fm, ON                          | 2                    |                    |
| 147                           | AO                    | R1050                                                                                                                | Su, ON                              | 1                    |                    |

PARTICULATE RESPIRATORS - DUSTS AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                               | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 151                           | North                 | 7506*<br>7506S<br>7506M<br>7506L<br>7706S<br>7706M<br>7706L                      | Rp, Fm, ON                          | 2                    |                    |
| 153                           | North                 | 7406L*<br>7406M*                                                                 | Rp, Fm, ON                          | 1                    | Z                  |
| 154                           | Sellstrom             | 315-F100                                                                         | Rp, Fm, ON                          | 2                    | Z                  |
| 154                           | Cover                 | 1482-F100<br>1482-S-F100<br>1482-L-F100<br>1585S-F100<br>1585-F100<br>1585L-F100 | Rp, Fm, ON                          | 2                    | Z                  |
| 154                           | Safe-Tex*             | 236-F100*                                                                        | Rp, Fm, ON                          | 2                    | Z                  |
| 154                           | Eastern               | E-450                                                                            | Rp, Fm, ON                          | 2                    | Z                  |
| 156                           | MSA                   | 461683                                                                           | Rp, Fm, ON                          | 1                    |                    |
| 157                           | Pulmosan              | C264*<br>10045<br>10213<br>10234<br>10294                                        | Rp, Fm, ON                          | 1                    |                    |
| 159                           | MSA                   | 460357                                                                           | Rp, Fm, ON                          | 1                    |                    |
| 162                           | AO                    | R2100<br>R8100<br>S8100                                                          | Rp, Fm, ON                          | 1                    |                    |
| 163                           | Cesco                 | 94R20*                                                                           | Rp, Fm, ON                          | 2                    | Z                  |
| 164                           | Glendale              | GR1600<br>GR2000<br>GR4000<br>GR8000                                             | Rp, Fm, ON                          | 2                    | Z                  |

PARTICULATE RESPIRATORS -- DUSTS AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                         | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 165                           | Pulmosan              | L800*<br>10171<br>10174<br>10216<br>10297                                                                                                                                                  | Rp,Fm,ON                            | 1                    |                    |
| 166                           | AO                    | R2090N<br>S2090N                                                                                                                                                                           | Rp,Fm,ON                            | 1                    |                    |
| 167                           | DeVilbiss             | MSD-507                                                                                                                                                                                    | Rp,Fm,ON                            | 1                    |                    |
| 170                           | North                 | 7170                                                                                                                                                                                       | Ru,ON                               | 1                    |                    |
| 172                           | Glendale              | GR1000<br>GR1500<br>GR3000<br>GR9000                                                                                                                                                       | Rp,Fm,ON                            | 1                    |                    |
| 173                           | 3M                    | 8800<br>8530                                                                                                                                                                               | Su,ON                               | 1                    | Z,S                |
| 174                           | Binks                 | 40-150                                                                                                                                                                                     | Su,ON                               | 1                    |                    |
| 175                           | North                 | 7100<br>7100V                                                                                                                                                                              | Rp,Fm,ON                            | 1                    |                    |
| 176                           | 3M                    | 9900                                                                                                                                                                                       | Su,ON                               | 1                    | Z                  |
| 177                           | Scott                 | 6411-0100*<br>6411-2100*/6411-3100*<br>6412-0100*/6413-0100*/6413-2100*/6413-3100*<br>6421-0100*/6422-0100*/6423-0100*<br>64-D<br>64E-D<br>64M-D<br>64ME-D<br>64S-D<br>64SE-D<br>604035-00 | Rp,Fm,ON                            | 2                    | Z                  |

PARTICULATE RESPIRATORS - DUSTS AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                           | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|--------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 179                           | U.S. Safety           | 150L10<br>150T10                                             | Rp,Fm,ON                            | 2                    |                    |
| 179                           | Stewart Warner        | 7932                                                         | Rp,Fm,ON                            | 2                    |                    |
| 180                           | Cesco                 | 95RC15<br>95SMRC15                                           | Rp,Fm,ON                            | 2                    |                    |
| 180                           | Northcott             | 70-451                                                       | Rp,Fm,ON                            | 2                    |                    |
| 181                           | MSA                   | 462240<br>466212<br>468011 thru 468014<br>480046 thru 480054 | Rp,Bm, ON                           | 2                    |                    |
| 182                           | Willson               | 1610<br>1710                                                 | Rp,Fm,FF                            | 2                    |                    |
| 188                           | MSA                   | 461845<br>466242<br>466243<br>471730<br>471731               | Rp,Fm,FF                            | 2                    |                    |
| 190                           | 3M                    | 9910                                                         | Su,ON                               | 1                    | Z                  |
| 191                           | North                 | 7606<br>7606S<br>7606N*<br>7606SN*                           | Rp,Fm,FF                            | 2                    |                    |
| 197                           | Racal                 | AH5                                                          | PAPR,HH                             | 1                    | Z                  |
| 198                           | Scott                 | 6470-0100*<br>6480-0100*<br>65-D<br>65S-D                    | Rp,Fm,FF                            | 2                    | Z                  |

PARTICULATE RESPIRATORS - DUSTS AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)               | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|----------------------------------|-------------------------------------|----------------------|--------------------|
| 206                           | MSA                   | 467010                           | Rp,Fm,ON                            | 1                    | Z                  |
| 207                           | AO                    | R7030<br>S7030<br>R7730<br>S7730 | Rp,Fm,FF                            | 2                    |                    |
| 211                           | Racal                 | AH21<br>AH15                     | PAPR,HH                             | 1                    | Z                  |
| 213                           | MSA                   | 467559                           | Rp,Fm,ON                            | 1                    |                    |
| 214                           | Willson               | 1410<br>CP1410<br>MM1410         | Ru,Su,ON                            | 1                    | S                  |
| 215                           | Binks                 | 40-145                           | Ru,Su,ON                            | 1                    | S                  |
| 216                           | Cesco                 | 96RC15                           | Rp,Fm,FF                            | 2                    |                    |
| 217                           | U.S. Safety           | 151T10                           | Rp,Fm,FF                            | 2                    |                    |
| 220                           | MSA                   | 467541                           | Ru,ON                               | 1                    |                    |
| 221                           | Pulmosan              | 10303<br>10306<br>10309<br>10312 | Rp,Fm,ON                            | 1                    |                    |
| 224                           | 3M                    | 9906                             | Su,ON                               | 1                    |                    |
| 225                           | 3M                    | W-316<br>W-343*                  | PAPR,H/H                            | 1                    | Z                  |

## PARTICULATE RESPIRATORS - DUSTS AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 232                           | USD Corp.             | 2110-00<br>2210-00<br>2310-00                                                                                        | Rp,Fm,ON                            | 2                    |                    |
| 233                           | 3M                    | 9908                                                                                                                 | Su,ON                               | 1                    |                    |
| 234                           | 3M                    | 9913                                                                                                                 | Su,ON                               | 1                    |                    |
| 235                           | 3M                    | W-325*                                                                                                               | PAPR,HH                             | 1                    | Z,AB               |
| 238                           | Glendale              | GR555                                                                                                                | Ru,Su,ON                            | 1                    |                    |
| 247                           | 3M                    | 9901<br>6982                                                                                                         | Su,ON                               | 1                    | A                  |
| 253                           | Willson               | 3010<br>3010R<br>3010S<br>3010SR<br>3010SS<br>3010SSS<br>S3010<br>S3010R<br>S3010S<br>S3010SR<br>S3010SS<br>S3010SSS | Rp,Bm,ON                            | 2                    |                    |
| 254                           | Willson               | 3110<br>3210                                                                                                         | Rp,Bm,FF                            | 2                    |                    |
| 261                           | Glendale              | GR7000                                                                                                               | Rp,Fm,FF                            | 2                    | A                  |
| 264                           | AO                    | R1070                                                                                                                | Su,ON                               | 1                    |                    |
| 266                           | AO                    | R2090AN<br>S2090AN                                                                                                   | Rp,Fm,ON                            | 1                    |                    |

PARTICULATE RESPIRATORS - DUSTS AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                     | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|----------------------------------------|-------------------------------------|----------------------|--------------------|
| 267                           | DeVilbiss             | MSD-512                                | Rp,Fm,ON                            | 1                    | Z                  |
| 271                           | Gerson                | 1710                                   | Su,ON                               | 1                    | Z,S                |
| 274                           | MSA                   | 472783<br>472785<br>472787             | Rp,Fm,ON                            | 2                    |                    |
| 279                           | 3M                    | 9915                                   | Su,ON                               | 1                    |                    |
| 282                           | Pulmosan              | 10435                                  | Rp,Fm,FF                            | 1                    |                    |
| 287                           | Moldex/Metric         | 2200                                   | Su,ON                               | 1                    |                    |
| 288                           | Pirelli               | 4336.2027                              | Rp,Fm,ON                            | 2                    |                    |
| 289                           | 3M                    | 7218                                   | Rp,Fm,ON                            | 2                    | Z                  |
| 290                           | Cesco                 | AD15*                                  | Su,ON                               | 1                    |                    |
| 291                           | U.S. Safety           | AD10                                   | Su,ON                               | 1                    |                    |
| 292                           | Zee Med. Prod.        | 2303                                   | Su,ON                               | 1                    | Z,S                |
| 293                           | Safety Supply         | Respair 200                            | Su,ON                               | 1                    | Z,S                |
| 294                           | Neoterik              | AB5<br>HH5                             | PAPR,HH                             | 1                    |                    |
| 295                           | Neoterik              | AB6<br>VB6<br>VH6<br>HH6<br>SH6<br>SB6 | PAPR,HH                             | 1                    |                    |

PARTICULATE RESPIRATORS - DUSTS AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                               | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 298                           | Racal                 | DM1 BR<br>DM1 WR<br>DM1 BL<br>DM1 WL<br>DM1 BRU<br>DM1 WRU<br>DM1 BLU<br>DM1 WLU | PAPR,HH                             | 1                    | Z                  |
| 299                           | Racal                 | DM3-S<br>DM3-U                                                                   | PAPR,HH                             | 1                    | Z                  |
| 300                           | Pirelli               | 4333.2027                                                                        | Rp,Fm,FF                            | 2                    |                    |
| 301                           | Safety Supply         | F-160-F<br>F-200-F<br>F-800-F                                                    | Rp,Fm,ON                            | 2                    |                    |
| 302                           | Safety Supply         | F-700-F                                                                          | Rp,Fm,ON                            | 2                    |                    |
| 307                           | Willson               | 1510<br>1510R<br>1510SS                                                          | Rp,Fm,ON                            | 2                    |                    |
| 308                           | Willson               | 3510<br>3510R<br>3510SS                                                          | Rp,Bm,ON                            | 2                    |                    |
| 315                           | Air-Tek               | AT-100                                                                           | Su,ON                               | 1                    | S                  |
| 317                           | Dunrite               | 475785                                                                           | Rp,Fm,ON                            | 1                    |                    |
| 318                           | 3M                    | W425                                                                             | PAPR,HH                             | 1                    | Z,AB               |
| 320                           | NZ Safety Ltd         | NZ1710*                                                                          | Su,ON                               | 1                    |                    |
| 322                           | Stewart-Warner        | 70-453                                                                           | Su,ON                               | 1                    |                    |



# PARTICULATE RESPIRATORS - DUSTS AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to      | Model<br>Number(s) | Respirator<br>and Facepiece<br>Type                                           | Number of<br>Filters | Other<br>Approvals         |
|-------------------------------|----------------------------|--------------------|-------------------------------------------------------------------------------|----------------------|----------------------------|
| 328                           | AO                         | R1090              | Su, ON                                                                        | 1                    |                            |
| 334                           | AO                         | R1080              | Su, ON                                                                        | 1                    |                            |
| 335                           | AO                         | R1010              | Su, ON                                                                        | 1                    |                            |
| 344                           | Cover                      | 1694-F100          | Rp, Fm, FF                                                                    | 2                    | Z                          |
| 347                           | North                      | 7175               | Su, ON                                                                        | 1                    | S                          |
| 350                           | Moldex                     | 2300               | Su, ON                                                                        | 1                    |                            |
| 351                           | AO                         | AO 1010            | Su, ON                                                                        | 1                    |                            |
| 352                           | Canadian<br>Technical Tape | 3535               | Su, ON                                                                        | 1                    |                            |
| 361                           | 3M                         | 8715               | Su, ON                                                                        | 1                    | Z                          |
| 363                           | 3M                         | 7818<br>7818C      | Rp, Fm, FF<br>For 7818C - Combination Type CF<br>Air pressure range<br>(psig) | 2                    | Z<br>Hose Length<br>(feet) |
|                               |                            |                    | 15 - 45                                                                       |                      | 25 - 50                    |
|                               |                            |                    | 17 - 50                                                                       |                      | 75 - 100                   |
|                               |                            |                    | 22 - 60                                                                       |                      | 125 - 200                  |
|                               |                            |                    | 25 - 75                                                                       |                      | 225 - 300                  |
| 364                           | Balkamp                    | 763-2271           | Su, ON                                                                        | 1                    | Su                         |
| 374                           | 3M                         | 9902               | Su, ON                                                                        | 1                    | Z                          |

### 3. Dusts, Fumes and Mists

#### Approval

Approved for respiratory protection against dusts, fumes and mists having an exposure limit measured as a time weighted average not less than 0.05 milligram per cubic meter or 2 million particles per cubic foot.

#### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow manufacturer's instructions for changing filters and replacing respirators.

Particulate respirators may also be approved for asbestos containing dusts and mists or radon daughters as indicated in the last column.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

D. Particulate Respirators  
 3. Dusts, Fumes and Mists

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| TC-21C-            |                       |                                                                                                                      |                                     |                      |                    |
| 134                | MSA                   | 459438<br>461011<br>465360<br>465936                                                                                 | Rp, Bm, Fm, ON                      | 2                    | R                  |
| 141                | Willson               | 1211<br>1211R<br>1211S<br>1211SR<br>1211SS<br>1211SSS<br>S1211<br>S1211R<br>S1211S<br>S1211SR<br>S1211SS<br>S1211SSS | Rp, Fm, ON                          | 2                    |                    |
| 161                | AO                    | R4056<br>S4056<br>R5056<br>S5056<br>R6056<br>S6056                                                                   | Rp, Fm, ON                          | 2                    | R                  |
| 169                | AO                    | R8156*                                                                                                               | Rp, Fm, ON                          | 1                    |                    |
| 183                | Willson               | 1611<br>1711                                                                                                         | Rp, Fm, FF                          | 2                    |                    |
| 187                | MSA                   | 461847<br>465938                                                                                                     | Rp, Fm, FF                          | 2                    | R                  |
| 189                | Glendale              | GR-1626<br>GR-2026<br>GR-4026<br>GR-8026                                                                             | Rp, Fm, ON                          | 2                    |                    |

PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                                       | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 193                           | U.S. Safety           | 150T11*                                                                                  | Rp,Fm,ON                            | 2                    | R,Z                |
| 194                           | Cesco                 | 95RC16*                                                                                  | Rp,Fm,ON                            | 2                    | R,Z                |
| 196                           | Eastern<br>Cover      | E456<br>1482-F108<br>1482-S-F108<br>1482-L-F108<br>1585S-F108<br>1585-F108<br>1585L-F108 | Rp,Fm,ON                            | 2                    | R,Z<br>R,Z         |
|                               | Sellstrom             | 315-F108                                                                                 |                                     |                      | R,Z                |
| 202                           | 3M                    | 9920                                                                                     | Su,ON                               | 1                    | R,Z                |
| 203                           | North                 | 7507*<br>7507S<br>7507M<br>7507L<br>7707S<br>7707M<br>7707L                              | Rp,Fm,ON                            | 2                    |                    |
| 204                           | North                 | 75BP07*<br>75BP07M<br>75BP07L                                                            | Rp,Bm,ON                            | 2                    |                    |
| 205                           | North                 | 7607<br>7607S<br>7607SN*<br>7607N*                                                       | Rp,Fm,FF                            | 2                    |                    |

PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                      | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 209                           | Scott                 | 6411-0300*<br>6413-0300*<br>6423-0300*<br>6412-0300*<br>6422-0300*<br>6421-0300*<br>64-F<br>64E-F<br>64ME-F<br>64S-F<br>64SE-F<br>64M-F | Rp,Fm,ON                            | 2                    | R,Z                |
| 210                           | Scott                 | 6470-0300*<br>6480-0300*<br>65-F<br>65S-F                                                                                               | Rp,Fm,FF                            | 2                    | R,Z                |
| 218                           | Cesco                 | 96RC16*                                                                                                                                 | Rp,Fm,FF                            | 2                    | R,Z                |
| 219                           | U.S. Safety           | 151T11*                                                                                                                                 | Rp,Fm,FF                            | 2                    | R,Z                |
| 222                           | Willson               | 1213/R/S/SR/SS/SSS*<br>S1213/R/S/SR/SS/SSS*                                                                                             | Rp,Fm,ON                            | 2                    |                    |
| 223                           | Willson               | 1613*<br>1713*                                                                                                                          | Rp,Fm,FF                            | 2                    |                    |
| 230                           | AO                    | R7056<br>S7056                                                                                                                          | Rp,Fm,FF                            | 2                    | R                  |
| 236                           | USD Corp.             | 2230-00*<br>2130-00*<br>2330-00*                                                                                                        | Rp,Fm,ON                            | 2                    | R                  |
| 240                           | US Safety             | 150T15<br>150L15                                                                                                                        | Rp,Fm,ON                            | 2                    | R                  |

## PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 241                           | Cesco                 | 95RC19<br>95SMRC19                                                                                                   | Rp, Fm, ON                          | 2                    | R                  |
| 242                           | US Safety             | 151T15                                                                                                               | Rp, Fm, FF                          | 2                    | R                  |
| 243                           | Cesco                 | 96RC19                                                                                                               | Rp, Fm, FF                          | 2                    | R                  |
| 248                           | Sellstrom             | 315-G108                                                                                                             | Rp, Fm, ON                          | 2                    |                    |
| 255                           | Willson               | 3011<br>3011R<br>3011S<br>3011SR<br>3011SS<br>3011SSS<br>S3011<br>S3011R<br>S3011S<br>S3011SR<br>S3011SS<br>S3011SSS | Rp, Bm, ON                          | 2                    |                    |
| 256                           | Willson               | 3111<br>3211                                                                                                         | Rp, Bm, FF                          | 2                    |                    |
| 262                           | Glendale              | GR7026                                                                                                               | Rp, Fm, FF                          | 2                    |                    |
| 268                           | AO                    | R4050W<br>S4050W<br>R5050W<br>S5050W<br>R6050W<br>S6050W                                                             | Rp, Fm, ON                          | 2                    | R                  |
| 273                           | MSA                   | 472754<br>472763                                                                                                     | Rp, Bm, ON                          | 2                    | R                  |

PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 280                           | USD Corp.             | 2140-00<br>2240-00<br>2340-00                                                        | Rp, Fm, ON                          | 2                    | R                  |
| 297                           | AO                    | R4050AW<br>S4050AW<br>R5050AW<br>S5050AW<br>R6050AW<br>S6050AW<br>R5550AW<br>S5550AW | Rp, Fm, ON                          | 2                    |                    |
| 303                           | Safety Supply         | F-200-MF<br>F-160-MF<br>F-800-MF                                                     | Rp, Fm, ON                          | 2                    |                    |
| 304                           | Safety Supply         | F-700-MF                                                                             | Rp, Fm, FF                          | 2                    |                    |
| 305                           | AO                    | R4056A<br>S4056A<br>R5056A<br>S5056A<br>R6056A<br>S6056A<br>R5556A<br>S5556A         | Rp, Fm, ON                          | 2                    |                    |
| 306                           | AO                    | R7056A<br>S7056A<br>R7756A<br>S7756A                                                 | Rp, Fm, FF                          | 2                    |                    |
| 309                           | Willson               | 1511, 1511R<br>1511SS                                                                | Rp, Bm, ON                          | 2                    |                    |
| 310                           | Willson               | 3511, 3511R<br>3511SS                                                                | Rp, Fm, ON                          | 2                    |                    |
| 311                           | Willson               | 1513, 1513R<br>1513SS                                                                | Rp, Fm, ON                          | 2                    |                    |

PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                 | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|----------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 312                           | Willson               | 3513<br>3513R<br>3513SS                            | Rp, Fm, ON                          | 2                    |                    |
| 323                           | MSA                   | 476412 thru<br>476420<br>479649 thru 479657        | Rp, Fm, ON                          | 2                    | R                  |
| 331                           | North                 | 7509S<br>7509M<br>7509L<br>7709S<br>7709M<br>7709L | Rp, Fm, ON                          | 2                    |                    |
| 332                           | North                 | 75BP09M<br>75BP09L                                 | Rp, Fm, ON                          | 2                    |                    |
| 333                           | North                 | 7609<br>7609S                                      | Rp, Fm, FF                          | 2                    |                    |
| 340                           | North                 | 7590S/M/L<br>7790S/M/L                             | Rp, Fm, ON                          | 2                    |                    |
| 341                           | North                 | 75BP90M<br>75BP90L                                 | Rp, Fm, ON                          | 2                    |                    |
| 342                           | North                 | 7690<br>7690S                                      | Rp, Fm, FF                          | 2                    |                    |
| 345                           | Cover                 | 1694-F108                                          | Rp, Fm, FF                          | 2                    | R, Z               |
| 348                           | 3M                    | 9925                                               | Su, ON                              | 1                    | R, Z               |
| 365                           | Willson               | 1217/S/R/SR/SS/SSS<br>S1217/S/R/SR/SS/SSS          | ON, Rp, Fm                          | 2                    |                    |



PARTICULATE RESPIRATORS - DUSTS, FUMES AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                        | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|-------------------------------------------|-------------------------------------|----------------------|--------------------|
| 366                           | Willson               | 1517, 1517R<br>1517SS                     | ON,Rp,Fm                            | 2                    |                    |
| 367                           | Willson               | 1617, 1717                                | FF,Rp,Fm                            | 2                    |                    |
| 368                           | Willson               | 3017/S/R/SR/SS/SSS<br>S3017/S/R/SR/SS/SSS | ON,Rp,Bm                            | 2                    |                    |
| 369                           | Willson               | 3117, 3217                                | FF,Rp,Bm                            | 2                    |                    |
| 370                           | Willson               | 3517, 3517R<br>3517SS                     | ON,Rp,Bm                            | 2                    |                    |

#### 4. High Efficiency

##### Approval

Approved for respiratory protection against dusts, fumes and mists having an exposure limit measured as a time weighted average less than 0.05 milligram per cubic meter and radionuclides.

##### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow manufacturer's instructions for changing filters and replacing respirators.

Particulate respirators may also be approved for asbestos containing dusts and mists, radon daughters, as indicated in the last column.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

For Combination Type C Supplied Air Respirators with escape high efficiency respirators add the following limitations:

Use only the hose lengths and pressure ranges specified on the approval label.

When airflow is cut off, switch to filter and immediately exit to clean air.

D. Particulate Respirators  
4. High Efficiency

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                                                                                | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|--------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| TC-21C-            |                       |                                                                                                                                                                                                                                                                   |                                     |                      |                    |
| 135                | MSA                   | 459439<br>461010<br>465361<br>465935                                                                                                                                                                                                                              | Rp, Bm, Fm, ON                      | 2                    | A                  |
| 136A               | 3M                    | W-250*<br>W-252*<br>W-254*<br>W-260-12<br>W-260-24*<br>W-261-12 S*/M/L<br>W-261-24 S*/M*/L*<br>W-266-12<br>W-266-24*<br>W-267*<br>W-278-12<br>W-278-24*<br>W-350*<br>W-349-12<br>W-289-12<br>W-289-24*<br>W-290*<br>W-295-12*<br>W-295-24*<br>W-297*<br>W-349-24* | PAPR, HH                            | 1                    | R                  |
| 137                | 3M                    | W-251*<br>W-252<br>W-265-12<br>W-265-24*                                                                                                                                                                                                                          | PAPR, HH                            | 1                    | AB                 |
| 142                | Willson               | 1212<br>1212R<br>1212S<br>1212SR<br>1212SS<br>1212SSS<br>S1212<br>S1212R<br>S1212S<br>S1212SS<br>S1212SSS<br>S1212SR                                                                                                                                              | Rp, Fm, ON                          | 2                    | A                  |

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                                                                         | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 149                           | Scott                 | 6160-1050<br>6160-2050<br>6170-0050<br>6170-1050<br>6170-2050<br>6150-0050<br>6150-1050<br>6150-2050<br>6155-0050<br>6155-1050<br>6155-2050<br>6160-0050<br>6165-0050<br>6165-1050<br>6165-2050<br>6175-0050<br>6175-1050<br>6175-2050<br>662-1*<br>662-2* | Rp, Fm, FF                          | 1                    | A                  |
| 150                           | MSA                   | 88479<br>457117                                                                                                                                                                                                                                            | Rp, Fm, FF                          | 1                    | A                  |
| 152                           | North                 | 7580*<br>7580S<br>7780S<br>7580M<br>7780M<br>7580L<br>7780L                                                                                                                                                                                                | Rp, Fm, ON                          | 2                    | A                  |
| 155                           | MSA                   | 460185<br>465937                                                                                                                                                                                                                                           | Rp, Fm, FF                          | 2                    | A                  |
| 158                           | Pulmosan              | C263*<br>10042<br>10231                                                                                                                                                                                                                                    | Rp, Fm, ON                          | 1                    | R, A               |
| 160                           | AO                    | R4057*<br>R5057*<br>R6057*                                                                                                                                                                                                                                 | Rp, Fm, ON                          | 2                    |                    |

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 168                           | North                 | 75BP80*<br>75BP80M<br>75BP80L                                                                                                                                                                                | Rp, Bm, ON                          | 2                    | A                  |
| 171                           | North                 | 7680<br>7680N*<br>7680S<br>7680SN*                                                                                                                                                                           | Rp, Fm, FF                          | 2                    | A                  |
| 178                           | Scott                 | 6411-0050*<br>6411-2050*<br>6411-3050*<br>6412-0050*<br>6413-0050*<br>6413-2050*<br>6413-3050*<br>6421-0050*<br>6422-0050*<br>6423-0050*<br>604022-50<br>64-H<br>64E-H<br>64M-H<br>64ME-H<br>64S-H<br>64SE-H | Rp, Fm, ON                          | 2                    | R, A               |
| 184                           | Willson               | 1612<br>1712                                                                                                                                                                                                 | Rp, Fm, FF                          | 2                    | A                  |
| 186                           | MSA                   | 463353<br>463354<br>463355<br>466607<br>466608<br>467963<br>467964<br>478735<br>478736                                                                                                                       | PAPR, ON, FF                        | 2                    | A                  |
| 199                           | Scott                 | 6422-0050*<br>6480-0050*<br>65-H<br>65S-H                                                                                                                                                                    | Rp, Fm, FF                          | 2                    | R, A               |

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                               | Respirator<br>and Facepiece<br>Type                                   | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------|--------------------|
| 200                           | MSA                   | 466095<br>466096<br>478773<br>478774                                             | SAR,FF<br>Combination Type C, CF<br>35 - 40 psig; 25-300 ft. hose     | 1                    |                    |
| 201                           | MSA                   | 466097<br>466098<br>466603                                                       | SAR,ON<br><br>Combination Type C, CF<br>35 - 40 psig; 25-300 ft. hose | 1                    |                    |
| 208                           | AO                    | R7057*                                                                           | Rp,Fm,FF                                                              | 2                    |                    |
| 212                           | Racal                 | AH3<br>AH3-1<br>AH3B<br>AH3B-1<br>AH17<br>AH17-1                                 | PAPR,HH                                                               | 2                    | R,A                |
| 226                           | Cesco                 | 95RC18<br>95SMRC18                                                               | Rp,Fm,ON                                                              | 2                    | R,A                |
| 227                           | Cesco                 | 96RC18                                                                           | Rp,Fm,FF                                                              | 2                    | R,A                |
| 228                           | U.S.Safety            | 150T12<br>150L12                                                                 | Rp,Fm,ON                                                              | 2                    | R,A                |
| 229                           | U.S.Safety            | 151T12                                                                           | Rp,Fm,FF                                                              | 2                    | R,A                |
| 231                           | Cover                 | 1482-G108<br>1482-S-G108<br>1482-L-G108<br>1585S-G108<br>1585-G108<br>1585L-G108 | Rp,Fm,ON                                                              | 2                    | R,A                |
| 237                           | Racal                 | AC3                                                                              | PAPR,HH                                                               | 2                    | R,A                |

## PARTICULATE RESPIRATORS - HIGH EFFICIENCY

| Approval<br>Number<br>TC-21C-- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|--------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 239                            | 3M                    | 9940                                                                                                                 | Su, ON                              | 1                    | R, A               |
| 244                            | USD Corp.             | 2190-00<br>2290-00<br>2390-00                                                                                        | Rp, Fm, ON                          | 2                    | A                  |
| 245                            | USD Corp.             | 3290-00                                                                                                              | Rp, Fm, FF                          | 2                    | A                  |
| 246                            | 3M                    | W-344                                                                                                                | PAPR, HH                            | 1                    | A                  |
| 249                            | AO                    | R4057A<br>S4057A<br>R5057A<br>S5057A<br>R6057A<br>S6057A<br>R5557A<br>S5557A                                         | Rp, Fm, ON                          | 2                    | R, A               |
| 250                            | AO                    | R7057A<br>S7057A<br>R7757A<br>S7757A                                                                                 | Rp, Fm, FF                          | 2                    | R, A               |
| 251                            | North                 | 10030S<br>10030M                                                                                                     | Su                                  | 1                    |                    |
| 252                            | Neoterik              | AB3, HH3                                                                                                             | PAPR, HH                            | 1                    | R, A               |
| 257                            | Willson               | 3012<br>3012R<br>3012S<br>3012SR<br>3012SS<br>3012SSS<br>S3012<br>S3012R<br>S3012S<br>S3012SR<br>S3012SS<br>S3012SSS | Rp, Bm, ON                          | 2                    | A                  |

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                           | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|----------------------------------------------|-------------------------------------|----------------------|--------------------|
| 258                           | Willson               | 3112, 3212                                   | Rp, Bm, FF                          | 2                    | A                  |
| 263                           | Neoterik              | AB4<br>HH4<br>VH4<br>VB4<br>SB4<br>SH4       | PAPR, HH                            | 1                    |                    |
| 265                           | 3M                    | 7206                                         | Rp, Fm, ON                          | 2                    | A, R               |
| 269                           | Neoterik              | GET<br>GEE<br>GVT<br>GVE<br>GST<br>GSE       | PAPR, HH                            | 1                    | A, R               |
| 270                           | Neoterik              | AB10<br>HH10<br>SB10<br>VB10<br>VH10<br>SH10 | PAPR, HH                            | 1                    | A, R               |
| 272                           | MSA                   | 472753<br>472762                             | Rp, Bm, ON                          | 2                    | A                  |
| 275                           | Racal                 | BE 1/P3                                      | PAPR, HH                            | 3                    | A, R               |
| 276                           | Racal                 | BE 3/P3<br>BE 7/P3                           | PAPR, FF                            | 3                    | A, R               |
| 277                           | Racal                 | BE 5/P3                                      | PAPR, HH                            | 3                    | A, R               |
| 278                           | Racal                 | BE 6/P3                                      | PAPR, HH                            | 3                    | A, R               |
| 281                           | Pulmosan              | 10432                                        | Rp, Fm, FF                          | 1                    | A, R               |



PARTICULATE RESPIRATORS - HIGH EFFICIENCY

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                       | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|------------------------------------------|-------------------------------------|----------------------|--------------------|
| 283                           | Pirelli               | 4333.2017                                | Rp,Fm,FF                            | 1                    |                    |
| 284                           | Pirelli               | 4337.1100                                | Rp,Fm,ON                            | 1                    |                    |
| 285                           | Neoterik              | AB8<br>HH8<br>VB8<br>VH8<br>SB8<br>SH8   | PAPR,HH                             | 1                    | A,R                |
| 286                           | Neoterik              | AB7<br>HH7                               | PAPR,HH                             | 1                    | A,R                |
| 296                           | AO                    | R8157A<br>S8157A                         | Rp,Fm,ON                            | 1                    | A,R                |
| 313                           | Willson               | 1512<br>1512R<br>1512SS                  | Rp,Fm,ON                            | 2                    | A                  |
| 314                           | Willson               | 3512<br>3512R<br>3512SS                  | Rp,Bm,ON                            | 2                    | A                  |
| 316                           | Draeger               | 4031013<br>4031015                       | Rp,Fm,FF                            | 1                    |                    |
| 319                           | 3M                    | W365                                     | PAPR,HH                             | 1                    | A,R,AB             |
| 321                           | Racal                 | BE17/P3                                  | PAPR,HH                             | 3                    | A,R                |
| 324                           | Racal                 | BE8/P3                                   | PAPR,ON                             | 3                    | A,R                |
| 325                           | Glendale              | GR-2050<br>GR-4050<br>GR-1650<br>GR-8050 | Rp,Fm,ON                            | 2                    | A,R                |

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)    | Respirator<br>and Facepiece<br>Type                             | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|-----------------------|-----------------------------------------------------------------|----------------------|--------------------|
| 326                           | Glendale              | GR-7050               | Rp,Fm,FF                                                        | 2                    | A,R                |
| 327                           | Neoterik              | NP1562-1              | PAPR,ON                                                         | 3                    | R                  |
| 329                           | Racal                 | BE4/P3                | PAPR,HH                                                         | 3                    | A,R                |
| 330                           | Neoterik              | NP1664-1<br>NP1564-2  | PAPR,FF                                                         | 3                    | A,R                |
| 336                           | MSA                   | 477978                | Rp,Fm,ON<br>NOT APPROVED FOR RADIONUCLIDES                      | 2                    | A                  |
| 337                           | MSA                   | 477979                | Rp,Fm,FF<br>NOT APPROVED FOR RADIONUCLIDES                      | 2                    | A                  |
| 338                           | MSA                   | 477977                | Rp,Bm,ON<br>NOT APPROVED FOR RADIONUCLIDES                      | 2                    | A                  |
| 339                           | MSA                   | 487976                | Rp,Bm,ON<br>NOT APPROVED FOR RADIONUCLIDES                      | 2                    | A                  |
| 343                           | MSA                   | 478116<br>478117      | CE<br>Combination Type C, CF<br>35-40 psig, 15 to 300 feet hose | 1                    | A                  |
| 346                           | Cover                 | 1694-G108             | Rp,Fm,FF                                                        | 2                    | A,R                |
| 349                           | Eastern<br>Safety     | 285                   | Rp,Fm,ON                                                        | 2                    | A,R                |
| 353                           | Racal                 | PF/PP/7SP3            | PAPR,FF                                                         | 2                    | A,R                |
| 354                           | MSA                   | 478740 thru<br>478745 | PAPR,ON<br>NOT APPROVED FOR RADIONUCLIDES                       | 2                    | A                  |

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                   | Respirator<br>and Facepiece<br>Type                                                                               | Number of<br>Filters                                                        | Other<br>Approvals |
|-------------------------------|-----------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------|
| 355                           | MSA                   | 478737<br>478738<br>478739           | PAPR,FF<br>NOT APPROVED FOR RADIONUCLIDES                                                                         | 2                                                                           | A                  |
| 356                           | MSA                   | 478760<br>478759                     | Rp,Fm,FF<br>NOT APPROVED FOR RADIONUCLIDES                                                                        | 1                                                                           | A                  |
| 357                           | MSA                   | 478779<br>478780<br>478781           | SAR,ON<br>NOT APPROVED FOR RADIONUCLIDES<br>Combination Type C, CF<br>35 - 40 psig, 15-300 ft. hose               | 1                                                                           | A                  |
| 358                           | MSA                   | 478775<br>478776<br>478778<br>478777 | SAR,FF<br>NOT APPROVED FOR RADIONUCLIDES<br>Combination Type C, CF<br>35 - 40 psig, 15-300 ft. hose               | 1                                                                           | A                  |
| 359                           | MSA                   | 478761<br>478762                     | SAR,FF<br>NOT APPROVED FOR RADIONUCLIDES<br>Combination Type C, CF<br>35 - 40 psig, 15-300 ft. hose               | 1                                                                           | A                  |
| 360                           | North                 | 7880<br>7880S                        | SAR,FF<br>Combination Type C, CF<br>Air pressure<br>(psig)<br>11-35<br>12-36<br>16-45<br>19-50                    | 2<br>Hose length<br>(feet)<br>12.5-50<br>75-125<br>150-225<br>250-300       | A                  |
| 362                           | 3M                    | 7806<br>7806C                        | Rp,Fm,FF<br>For 7806 Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | A,R                |

PARTICULATE RESPIRATORS - HIGH EFFICIENCY

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)             | Respirator<br>and Facepiece<br>Type                                     | Number of<br>Filters                     | Other<br>Approvals |
|--------------------|-----------------------|--------------------------------|-------------------------------------------------------------------------|------------------------------------------|--------------------|
| TC-21C-            |                       |                                |                                                                         |                                          |                    |
| 371                | Willson               | 2173<br>2273                   | FF,Rp,Fm                                                                | 1                                        | A                  |
| 372                | Willson               | 1853A/B/C/D/E<br>1863A/B/C/D/E | FF,Rp,Bm<br>Combination Type C, CF<br>Air pressure<br>(psig)<br>6 - 65  | 1<br>Hose length<br>(feet)<br>25 - 300   | A                  |
| 373                | Willson               | 1813A/B/C/D/E                  | FF,Rp,Bm<br>Combination Type C, CF<br>Air pressure<br>(psig)<br>6 - 65  | 1<br>Hose length<br>(feet)<br>25 - 300   | A                  |
| 375                | North                 | 85780                          | Rp,Fm,FF<br>Combination Type C, Pd<br>Air pressure<br>(psig)<br>78 - 80 | 2<br>Hose length<br>(feet)<br>12.5 - 300 | A                  |

### CHEMICAL CARTRIDGE RESPIRATORS (23C)

## E. Chemical Cartridges

### 1. Ammonia

#### Approval

Approved for respiratory protection against not more than 300 parts per million ammonia.

#### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

## E. Chemical Cartridges

## 1. Ammonia

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 43                 | MSA                   | 459436<br>461008                                                                                                                             | Rp, Fm, Bm, ON                      | 2                          | D, M                      | MA                  |
| 63                 | North                 | 7504*<br>7504M<br>7704M<br>7504S<br>7704S<br>7504L<br>7704L                                                                                  | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 64                 | North                 | 7514*<br>7514M<br>7714M<br>7514S<br>7714S<br>7514L<br>7714L                                                                                  | Rp, Fm, ON                          | 2                          | D, M                      | MA                  |
| 70                 | Willson               | 1224<br>S1224R<br>1224S<br>S1224SS<br>1224SR<br>S1224<br>S1224SSS<br>S1224SR<br>1224SSS<br>S1224S<br>1224R<br>1224SS                         | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 71                 | Willson               | 122410<br>S122410<br>122410S<br>S122410R<br>122410SS<br>S122410SR<br>122410SSS<br>S122410S<br>122410R<br>S122410SS<br>122410SR<br>S122410SSS | Rp, Fm, ON                          | 2                          | D, M                      | MA                  |

## CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                 | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                    |                                     |                            |                           |                     |
| 109                | AO                    | R4054*<br>R5054*<br>R6054*         | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 139                | Willson               | 1624<br>1724                       | Rp, Fm, FF                          | 2                          |                           | MA                  |
| 140                | Willson               | 162410<br>172410                   | Rp, Fm, FF                          | 2                          | D, M                      | MA                  |
| 147                | MSA                   | 461851                             | Rp, Fm, FF                          | 2                          | D, M                      | MA                  |
| 152                | MSA                   | 461857                             | Rp, Fm, FF                          | 2                          | H, A                      | MA                  |
| 158                | MSA                   | 460849<br>461015                   | Rp, Fm, Bm, ON                      | 2                          | H, A                      | MA                  |
| 176                | North                 | 75BP04*<br>75BP04M<br>75BP04L      | Rp, Bm, ON                          | 2                          |                           | MA                  |
| 177                | North                 | 75BP14*<br>75BP14M<br>75BP14L      | Rp, Bm, ON                          | 2                          | D, M                      | MA                  |
| 182                | North                 | 7604<br>7604S<br>7604N*<br>7604SN* | Rp, Fm, FF                          | 2                          |                           | MA                  |
| 187                | North                 | 7614<br>7614S<br>7614N*<br>7614SN* | Rp, Fm, FF                          | 2                          | D, M                      | MA                  |
| 191                | US Safety             | 150T22<br>150L22                   | Fm, ON                              | 2                          |                           | MA                  |



## CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 192                           | Cesco                 | 95RC65<br>95SMRC65                                                                                                | Fm, ON                              | 2                          |                           | MA                  |
| 193                           | US Safety             | 150T27<br>150L27                                                                                                  | Rp, Fm, ON                          | 2                          | D, M                      | MA                  |
| 194                           | Cesco                 | 95RC95<br>95SMRC95                                                                                                | Rp, Fm, ON                          | 2                          | D, M                      | MA                  |
| 213                           | North                 | 7584M<br>7784M<br>7584S<br>7784S<br>7584L<br>7784L<br>7584*                                                       | Rp, Fm, ON                          | 2                          | H, R, A                   | MA                  |
| 214                           | North                 | 75BP84*<br>75BP84L<br>75BP84M                                                                                     | Rp, Bm, ON                          | 2                          | H, R, A                   | MA                  |
| 215                           | North                 | 7684<br>7684S                                                                                                     | Rp, Fm, FF                          | 2                          | H, R, A                   | MA                  |
| 217                           | 3M                    | 8727<br>8728                                                                                                      | Su, ON                              | 1                          | D, M<br>8728 only         | MA                  |
| 235                           | AO                    | R7054*                                                                                                            | Rp, Fm, FF                          | 2                          |                           | MA                  |
| 252                           | Scott                 | 6411-0004*<br>6412-0004*<br>6413-0004*<br>6422-0004*<br>64-AM<br>64E-AM<br>64M-AM<br>64ME-AM<br>64S-AM<br>64SE-AM | Rp, Fm, ON                          | 2                          |                           | MA                  |

## CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 253                           | Scott                 | 6470-0004*<br>65-AM<br>6480-0004*<br>65S-AM                                                                                                               | Rp,Fm,FF                            | 2                          |                           | MA                  |
| 254                           | Scott                 | 6411-0104*<br>64-AM-D<br>6413-0104*<br>64E-AM-D<br>6421-0104*<br>64M-AM-D<br>6423-0104*<br>64ME-AM-D<br>6412-0104*<br>64S-AM-D<br>6422-0104*<br>64SE-AM-D | Rp,Fm,ON                            | 2                          | D,M,A                     | MA                  |
| 255                           | Scott                 | 6470-0104*<br>6480-0104<br>65-AM-D<br>65S-AM-D                                                                                                            | Rp,Fm,FF                            | 2                          | D,M,A                     | MA                  |
| 256                           | Scott                 | 6411-0304*<br>6412-0304*<br>6413-0304*<br>6421-0304*<br>6422-0304*<br>6423-0304*<br>64-AM-F<br>64E-AM-F<br>64M-AM-F<br>64ME-AM-F<br>64S-AM-F<br>64SE-AM-F | Rp,Fm,ON                            | 2                          | D,F,M,A,R                 | MA                  |
| 257                           | Scott                 | 6470-0304*<br>6480-0304*<br>65-AM-F<br>65S-AM-F                                                                                                           | Rp,Fm,FF                            | 2                          | D,F,M,A,R                 | MA                  |
| 269                           | Cesco                 | 96RC95                                                                                                                                                    | Rp,Fm,FF                            | 2                          | D,M                       | MA                  |

## CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 270                           | US Safety             | 151T27                                                                                                               | Rp, Fm, FF                          | 2                          | D, M                      | MA                  |
| 279                           | Cover                 | 1482-G106<br>1482-S-G106<br>1482-L-G106<br>1585S-G106<br>1585-G106<br>1585L-G106                                     | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 280                           | Cover                 | 1482-G106-F100<br>1482-S-G106-F100<br>1482-L-G106-F100<br>1585S-G106-F100<br>1585-G106-F100<br>1585L-G106-F100       | Rp, Fm, ON                          | 2                          | D, M                      | MA                  |
| 283                           | Pulmosan              | 10018<br>10246<br>10192<br>10279                                                                                     | Rp, Fm, ON                          | 1                          |                           | MA                  |
| 284                           | Pulmosan              | 10033<br>10207<br>10258<br>10291                                                                                     | Rp, Fm, ON                          | 1                          | D, M                      | MA                  |
| 289                           | Willson               | 1234<br>1234R<br>1234S<br>1234SR<br>1234SS<br>1234SSS<br>S1234<br>S1234R<br>S1234S<br>S1234SR<br>S1234SS<br>S1234SSS | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 290                           | Willson               | 1634<br>1734                                                                                                         | Rp, Fm, FF                          | 2                          |                           | MA                  |

## CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 291                           | Willson               | 123412<br>123412R<br>123412S<br>123412SR<br>123412SS<br>123412SSS<br>S123412<br>S123412R<br>S123412S<br>S123412SR<br>S123412SS<br>S123412SSS | Rp, Fm, ON                          | 2                          | H, A                      | MA                  |
| 292                           | Willson               | 163412<br>173412                                                                                                                             | Rp, Fm, FF                          | 2                          | H, A                      | MA                  |
| 314                           | Cesco                 | 95RC60<br>95SMRC60                                                                                                                           | Rp, Fm, ON                          | 2                          | H, R, A                   | MA                  |
| 315                           | US Safety             | 150T42<br>150L42                                                                                                                             | Rp, Fm, ON                          | 2                          | H, R, A                   | MA                  |
| 316                           | Cesco                 | 96RC60                                                                                                                                       | Rp, Fm, FF                          | 2                          | H, R, A                   | MA                  |
| 317                           | US Safety             | 151T42                                                                                                                                       | Rp, Fm, FF                          | 2                          | H, R, A                   | MA                  |
| 319                           | Sellstrom             | 315-G106                                                                                                                                     | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 329                           | AO                    | R4054A<br>S4054A<br>R5054A<br>S5054A<br>R6054A<br>S6054A<br>R5554A<br>S5554A                                                                 | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 330                           | AO                    | R7054A<br>S7054A<br>R7754A<br>S7754A                                                                                                         | Rp, Fm, FF                          | 2                          |                           | MA                  |

## CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 331                           | AO                    | R4054AD<br>S4054AD<br>R5054AD<br>S5054AD<br>R6054AD<br>S6054AD<br>R5554AD<br>S5554AD                                 | Rp, Fm, ON                          | 2                          | D, M                      | MA                  |
| 332                           | AO                    | R7054AD<br>S7054AD<br>R7754AD<br>S7754AD                                                                             | Rp, Fm, FF                          | 2                          | D, M                      | MA                  |
| 347                           | Eastern               | E453                                                                                                                 | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 350                           | North                 | 10004S<br>10004M                                                                                                     | Su, ON                              | 1                          |                           | MA                  |
| 358                           | North                 | 10014S<br>10014M                                                                                                     | Su, ON                              | 1                          | D, M                      | MA                  |
| 364                           | Willson               | 3024<br>3024S<br>S3024<br>3024SR<br>S3024S<br>3024R<br>S3024R<br>S3024SR<br>S3024SS<br>S3024SSS<br>3024SS<br>3024SSS | Rp, Bm, ON                          | 2                          |                           | MA                  |
| 365                           | Willson               | 3124<br>3224                                                                                                         | Rp, Bm, FF                          | 2                          |                           | MA                  |

## CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 366                | Willson               | 3034<br>3034S<br>S3034<br>3034R<br>S3034R<br>3034SR<br>S3034S<br>S3034SR<br>S3034SS<br>S3034SSS<br>3034SS<br>3034SSS                         | Rp, Bm, ON                          | 2                          |                           | MA                  |
| 367                | Willson               | 3134<br>3234                                                                                                                                 | Rp, Bm, FF                          | 2                          |                           | MA                  |
| 378                | Willson               | 302410<br>S302410<br>302410S<br>S302410R<br>302410R<br>S302410SR<br>302410SR<br>S302410SS<br>S302410SSS<br>302410SS<br>302410SSS<br>S302410S | Rp, Bm, ON                          | 2                          | D, M                      | MA                  |
| 379                | Willson               | 312410<br>322410                                                                                                                             | Rp, Bm, FF                          | 2                          | D, M                      | MA                  |
| 384                | Willson               | 303412<br>S303412<br>303412R<br>S303412R<br>303412S<br>S303412S<br>303412SR<br>S303412SS<br>S303412SSS<br>303412SS<br>303412SSS<br>S30314SR  | Rp, Bm, ON                          | 2                          | H, A                      | MA                  |

CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                      |                                     |                            |                           |                     |
| 385                | Willson               | 313412<br>323412                                                                     | Rp,Bm,FF                            | 2                          | H,A                       | MA                  |
| 403                | Glendale              | GR1624<br>GR2024<br>GR4024<br>GR8024                                                 | Rp,Fm,ON                            | 2                          |                           |                     |
| 412                | Glendale              | GR7024                                                                               | Rp,Fm,FF                            | 2                          | D,M                       |                     |
| 419                | AO                    | R5054HE<br>S5054HE<br>R4054HE<br>S4054HE<br>R6054HE<br>S6054HE<br>R5554HE<br>S5554HE | Rp,Fm,ON                            | 2                          | H,R,A                     | MA                  |
| 420                | AO                    | R7054HE<br>S7054HE<br>R7754HE<br>S7754HE                                             | Rp,Fm,FF                            | 2                          | H,R,A                     | MA                  |
| 422                | USD                   | 2104-00<br>2204-00<br>2304-00                                                        | Rp,Fm,ON                            | 2                          |                           | MA                  |
| 423                | USD                   | 3204-00                                                                              | Rp,Fm,ON                            | 2                          |                           | MA                  |
| 440                | 3M                    | 7204                                                                                 | Rp,Fm,ON                            | 2                          |                           | MA                  |
| 441                | 3M                    | 7211                                                                                 | Rp,Fm,ON                            | 2                          | D,M,A                     | MA                  |
| 442                | 3M                    | 7215                                                                                 | Rp,Fm,ON                            | 2                          | H,R,A                     | MA                  |



## CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 457                           | Cover                 | 1482-G106-G208<br>1482-S-G106-G208<br>1482-L-G106-G208<br>1585S-G106-G208<br>1585-G106-G208<br>1585L-G106-G208 | Rp, Fm, ON                          | 2                          | H, R, A                   | MA                  |
| 463                           | MSA                   | 472751                                                                                                         | Rp, Bm, ON                          | 2                          | D, M                      | MA                  |
| 468                           | MSA                   | 472758                                                                                                         | Rp, Bm, ON                          | 2                          | H, A                      | MA                  |
| 498                           | Pulmosan              | 10417                                                                                                          | Rp, Fm, FF                          | 1                          |                           | MA                  |
| 502                           | Pulmosan              | 10429                                                                                                          | Rp, Fm, FF                          | 1                          | D, M                      | MA                  |
| 513                           | MSA                   | 469730                                                                                                         | Rp, Fm, ON                          | 1                          |                           | MA                  |
| 515                           | Pirelli               | 4336.2022                                                                                                      | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 519                           | Scott                 | 64-AM-H<br>64E-AM-H<br>64M-AM-H<br>64ME-AM-H<br>64S-AM-H<br>64SE-AM-H                                          | Rp, Fm, ON                          | 2                          | H, R, A                   | MA                  |
| 520                           | Scott                 | 65-AM-H,<br>65S-AM-H                                                                                           | Rp, Fm, FF                          | 2                          | H, R, A                   | MA                  |
| 528                           | Pirelli               | 4332.2022                                                                                                      | Rp, Fm, FF                          | 2                          |                           |                     |
| 544                           | Safety<br>Supply      | F-200-AM<br>F-160-AM<br>F-800-AM                                                                               | Rp, Fm, ON                          | 2                          |                           |                     |
| 545                           | Safety<br>Supply      | F-700-AM                                                                                                       | Rp, Fm, FF                          | 2                          |                           |                     |



CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 559                           | Willson               | 1524<br>1524R<br>1524SS       | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 560                           | Willson               | 3524<br>3524R<br>3524SS       | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 561                           | Willson               | 1534<br>1534R<br>1534SS       | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 562                           | Willson               | 3534<br>3534R<br>3534SS       | Rp, Fm, ON                          | 2                          |                           | MA                  |
| 575                           | Willson               | 152410<br>152410R<br>152410SS | Rp, Fm, ON                          | 2                          | D, M                      | MA                  |
| 576                           | Willson               | 352410<br>352410R<br>352410SS | Rp, Fm, ON                          | 2                          | D, M                      | MA                  |
| 581                           | Willson               | 153412<br>153412R<br>153412SS | Rp, Fm, ON                          | 2                          | H, A                      | MA                  |
| 582                           | Willson               | 353412<br>353412R<br>353412SS | Rp, Fm, ON                          | 2                          | H, A                      | MA                  |
| 589                           | Racal                 | BE1/K                         | PAPR, HH                            | 3                          |                           | MA                  |
| 590                           | Racal                 | BE3/KC<br>BE7/KC              | PAPR, FF                            | 3                          |                           | MA                  |
| 591                           | Racal                 | BE5/K                         | PAPR, HH                            | 3                          |                           | MA                  |

## CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                      |                                     |                            |                           |                     |
| 592                | Racal                 | BE6/K                                                | PAPR,HH                             | 3                          |                           | MA                  |
| 612                | Racal                 | BE8/K                                                | PAPR,ON                             | 3                          |                           | MA                  |
| 623                | Glendale              | GR-1624-50<br>GR-2024-50<br>GR-4024-50<br>GR-8024-50 | Rp,Fm,ON                            | 2                          | H,R,A                     | MA                  |
| 624                | Glendale              | GR-7024-50                                           | Rp,Fm,FF                            | 2                          | H,R,A                     | MA                  |
| 628                | Neoterik              | NP-1562-8                                            | PAPR,ON                             | 3                          |                           | MA                  |
| 633                | Racal                 | BE4/K                                                | PAPR,HH                             | 3                          |                           | MA                  |
| 639                | Neoterik              | NP1664-8<br>NP1564-8                                 | PAPR,FF                             | 3                          |                           | MA                  |
| 641                | Racal                 | BE1/KP3                                              | PAPR,HH                             | 3                          | H,R,A                     | MA                  |
| 642                | Racal                 | BE3/KP3<br>BE7/KP3                                   | PAPR,FF                             | 3                          | H,R,A                     | MA                  |
| 643                | Racal                 | BE4/KP3                                              | PAPR,HH                             | 3                          | H,R,A                     | MA                  |
| 644                | Racal                 | BE5/KP3                                              | PAPR,HH                             | 3                          | H,R,A                     | MA                  |
| 645                | Racal                 | BE6/KP3                                              | PAPR,HH                             | 3                          | H,R,A                     | MA                  |
| 646                | Racal                 | BE8/KP3                                              | PAPR,ON                             | 3                          | H,R,A                     | MA                  |
| 658                | North                 | 7594S/M/L<br>7794S/M/L                               | Rp,Fm,ON                            | 2                          | D,F,M                     | MA                  |
| 659                | North                 | 75BP94M                                              | Rp,Bm,ON                            | 2                          | D,F,M                     | MA                  |

CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s) | Respirator<br>and Facepiece<br>Type                                                                                | Number<br>of<br>Cartridges                                                  | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------|---------------------|
| 660                           | North                 | 7694<br>7694S      | Rp,Fm,FF                                                                                                           | 2                                                                           | D,F,M                     | MA                  |
| 666                           | Cover                 | 1694-G106          | Rp,Fm,FF                                                                                                           | 2                                                                           |                           | MA                  |
| 667                           | Cover                 | 1694-G106-F100     | Rp,Fm,FF                                                                                                           | 2                                                                           | D,M                       | MA                  |
| 674                           | Cover                 | 1694-G106-G208     | Rp,Fm,FF                                                                                                           | 2                                                                           | H,R,A                     | MA                  |
| 686                           | 3M                    | 7804<br>7804C      | Rp,Fm,FF<br>For 7804C Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 |                           | MA                  |
| 692                           | 3M                    | 7811<br>7811C      | Rp,Fm,FF<br>For 7811C Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | D,M,A                     | MA                  |
| 696                           | 3M                    | 7815<br>7815C      | Rp,Fm,FF<br>For 7815C Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | H,R,A                     | MA                  |

CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 723                           | Willson               | 122417/S/R/SR/SS/SSS<br>122417/S/R/SR/SS/SSS  | ON,Rp,Fm                            | 2                          | D,F,M                     | MA                  |
| 724                           | Willson               | 162417<br>172417                              | FF,Rp,Fm                            | 2                          | D,F,M                     | MA                  |
| 725                           | Willson               | 152417<br>152417R<br>152417SS                 | ON,Rp,Fm                            | 2                          | D,F,M                     | MA                  |
| 726                           | Willson               | 302417/S/R/SR/SS/SSS<br>S302417/S/R/SR/SS/SSS | ON,Rp,Bm                            | 2                          | D,F,M                     | MA                  |
| 727                           | Willson               | 312417<br>322417                              | FF,Rp,Bm                            | 2                          | D,F,M                     | MA                  |
| 728                           | Willson               | 352417<br>352417R<br>352417SS                 | ON,Rp,Bm                            | 2                          | D,F,M                     | MA                  |

## 2. Methyl Amine

### Approval

Approved for respiratory protection against not more than 100 parts per million methyl amine.

### Limitations

Not for use in atmospheres immediately dangerous to life and health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

E. Chemical Cartridges  
2. Methyl Amine

| Approval<br>Number<br>TC-23C | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 43                           | MSA                   | 459436<br>461008                                                                                                                             | Rp, Fm, Bm, ON                      | 2                          | D, M                      | NH3                 |
| 63                           | North                 | 7504*<br>7504M<br>7704M<br>7504S<br>7704S<br>7504L<br>7704L                                                                                  | Rp, Fm, ON                          | 2                          |                           | NH3                 |
| 64                           | North                 | 7514*<br>7514M<br>7714M<br>7514S<br>7714S<br>7514L<br>7714L                                                                                  | Rp, Fm, ON                          | 2                          | D, M                      | NH3                 |
| 70                           | Willson               | 1224<br>S1224R<br>1224S<br>S1224SS<br>1224SR<br>S1224<br>S1224SSS<br>S1224SR<br>1224SSS<br>S1224S<br>1224R<br>1224SS                         | Rp, Fm, ON                          | 2                          |                           | NH3                 |
| 71                           | Willson               | 122410<br>S122410<br>122410S<br>S122410R<br>122410SS<br>S122410SR<br>122410SSS<br>S122410S<br>122410R<br>S122410SS<br>122410SR<br>S122410SSS | Rp, Fm, ON                          | 2                          | D, M                      | NH3                 |

CHEMICAL CARTRIDGES - METHYL AMINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                 | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 109                           | AO                    | R4054*<br>R5054*<br>R6054*         | Rp, Fm, ON                          | 2                          |                           | NH3                 |
| 139                           | Willson               | 1624<br>1724                       | Rp, Fm, FF                          | 2                          |                           | NH3                 |
| 140                           | Willson               | 162410<br>172410                   | Rp, Fm, FF                          | 2                          | D, M                      | NH3                 |
| 147                           | MSA                   | 461851                             | Rp, Fm, FF                          | 2                          | D, M                      | NH3                 |
| 152                           | MSA                   | 461857                             | Rp, Fm, FF                          | 2                          | H, A                      | NH3                 |
| 158                           | MSA                   | 460849<br>461015                   | Rp, Fm, Bm, ON                      | 2                          | H, A                      | NH3                 |
| 176                           | North                 | 75BP04*<br>75BP04M<br>75BP04L      | Rp, Bm, ON                          | 2                          |                           | NH3                 |
| 177                           | North                 | 75BP14*<br>75BP14M<br>75BP14L      | Rp, Bm, ON                          | 2                          | D, M                      | NH3                 |
| 182                           | North                 | 7604<br>7604S<br>7604N*<br>7604SN* | Rp, Fm, FF                          | 2                          |                           | NH3                 |
| 187                           | North                 | 7614<br>7614S<br>7614N*<br>7614SN* | Rp, Fm, FF                          | 2                          | D, M                      | NH3                 |
| 191                           | US Safety             | 150T22<br>150L22                   | Fm, ON                              | 2                          |                           | NH3                 |



## CHEMICAL CARTRIDGES - METHYL AMINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 192                           | Cesco                 | 95RC65<br>95SMRC65                                                                                                | Fm, ON                              | 2                          |                           | NH3                 |
| 193                           | US Safety             | 150T27<br>150L27                                                                                                  | Rp, Fm, ON                          | 2                          | D, M                      | NH3                 |
| 194                           | Cesco                 | 95RC95<br>95SMRC95                                                                                                | Rp, Fm, ON                          | 2                          | D, M                      | NH3                 |
| 213                           | North                 | 7584M<br>7784M<br>7584S<br>7784S<br>7584L<br>7784L<br>7584*                                                       | Rp, Fm, ON                          | 2                          | H, A, R                   | NH3                 |
| 214                           | North                 | 75BP84*<br>75BP84L<br>75BP84M                                                                                     | Rp, Bm, ON                          | 2                          | H, A, R                   | NH3                 |
| 215                           | North                 | 7684<br>7684S                                                                                                     | Rp, Fm, FF                          | 2                          | H, A, R                   | NH3                 |
| 217                           | 3M                    | 8727<br>8728                                                                                                      | Su, ON                              | 1                          | D, M<br>8728 only         | NH3                 |
| 235                           | AO                    | R7054*                                                                                                            | Rp, Fm, FF                          | 2                          |                           | NH3                 |
| 252                           | Scott                 | 6411-0004*<br>6412-0004*<br>6413-0004*<br>6422-0004*<br>64-AM<br>64E-AM<br>64M-AM<br>64ME-AM<br>64S-AM<br>64SE-AM | Rp, Fm, ON                          | 2                          |                           | NH3                 |



## CHEMICAL CARTRIDGES -- METHYL AMINE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                                                           |                                     |                            |                           |                     |
| 253                | Scott                 | 6470-0004*<br>6480-0004*<br>65-AM<br>65S-AM                                                                                                               | Rp, Fm, FF                          | 2                          |                           | NH3                 |
| 254                | Scott                 | 6411-0104*<br>6412-0104*<br>6413-0104*<br>6421-0104*<br>6422-0104*<br>6423-0104*<br>64-AM-D<br>64E-AM-D<br>64M-AM-D<br>64ME-AM-D<br>64S-AM-D<br>64SE-AM-D | Rp, Fm, ON                          | 2                          | D, M, Z                   | NH3                 |
| 255                | Scott                 | 6470-0104*<br>6480-0104<br>65-AM-D<br>65S-AM-D                                                                                                            | Rp, Fm, FF                          | 2                          | D, M, Z                   | NH3                 |
| 256                | Scott                 | 6411-0304*<br>6412-0304*<br>6413-0304*<br>6421-0304*<br>6422-0304*<br>6423-0304*<br>64-AM-F<br>64E-AM-F<br>64M-AM-F<br>64ME-AM-F<br>64S-AM-F<br>64SE-AM-F | Rp, Fm, ON                          | 2                          | D, F, M, Z, R             | NH3                 |
| 257                | Scott                 | 6470-0304*<br>6480-0304*<br>65-AM-F<br>65S-AM-F                                                                                                           | Rp, Fm, FF                          | 2                          | D, F, M, Z, R             | NH3                 |
| 269                | Cesco                 | 96RC95                                                                                                                                                    | Rp, Fm, FF                          | 2                          | D, M                      | NH3                 |

CHEMICAL CARTRIDGES - METHYL AMINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 270                           | US Safety             | 151T27                                                                                                               | Rp,Fm,FF                            | 2                          | D,M                       | NH3                 |
| 279                           | Cover                 | 1482-G106<br>1482-S-G106<br>1482-L-G106<br>1585S-G106<br>1585-G106<br>1585L-G106                                     | Rp,Fm,ON                            | 2                          |                           | NH3                 |
| 280                           | Cover                 | 1482-G106-F100<br>1482-S-G106-F100<br>1482-L-G106-F100<br>1585S-G106-F100<br>1585-G106-F100<br>1585L-G106-F100       | Rp,Fm,ON                            | 2                          | D,M                       | NH3                 |
| 283                           | Pulmosan              | 10018<br>10192<br>10246<br>10279                                                                                     | Rp,Fm,ON                            | 1                          |                           | NH3                 |
| 284                           | Pulmosan              | 10033<br>10207<br>10258<br>10291                                                                                     | Rp,Fm,ON                            | 1                          | D,M                       | NH3                 |
| 289                           | Willson               | 1234<br>1234R<br>1234S<br>1234SR<br>1234SS<br>1234SSS<br>S1234<br>S1234R<br>S1234S<br>S1234SR<br>S1234SS<br>S1234SSS | Rp,Fm,ON                            | 2                          |                           | NH3                 |
| 290                           | Willson               | 1634<br>1734                                                                                                         | Rp,Fm,FF                            | 2                          |                           | NH3                 |

## CHEMICAL CARTRIDGES - METHYL AMINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 291                           | Willson               | 123412<br>123412R<br>123412S<br>123412SR<br>123412SS<br>123412SSS<br>S123412<br>S123412R<br>S123412S<br>S123412SR<br>S123412SS<br>S123412SSS | Rp, Fm, ON                          | 2                          | H, A                      | NH3                 |
| 292                           | Willson               | 163412<br>173412                                                                                                                             | Rp, Fm, FF                          | 2                          | H, A                      | NH3                 |
| 314                           | Cesco                 | 95RC60<br>95SMRC60                                                                                                                           | Rp, Fm, ON                          | 2                          | H, A, R                   | NH3                 |
| 315                           | US Safety             | 150T42<br>150L42                                                                                                                             | Rp, Fm, ON                          | 2                          | H, A, R                   | NH3                 |
| 316                           | Cesco                 | 96RC60                                                                                                                                       | Rp, Fm, FF                          | 2                          | H, A, R                   | NH3                 |
| 317                           | US Safety             | 151T42                                                                                                                                       | Rp, Fm, FF                          | 2                          | H, A, R                   | NH3                 |
| 319                           | Sellstrom             | 315-G106                                                                                                                                     | Rp, Fm, ON                          | 2                          |                           | NH3                 |
| 329                           | AO                    | R4054A<br>S4054A<br>R5054A<br>S5054A<br>R6054A<br>S6054A<br>R5554A<br>S5554A                                                                 | Rp, Fm, ON                          | 2                          |                           | NH3                 |
| 330                           | AO                    | R7054A<br>S7054A<br>R7754A<br>S7754A                                                                                                         | Rp, Fm, FF                          | 2                          |                           | NH3                 |

## CHEMICAL CARTRIDGES - METHYL AMINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 331                           | AO                    | R4054AD<br>S4054AD<br>R5054AD<br>S5054AD<br>R6054AD<br>S6054AD<br>R5554AD<br>S5554AD                                 | Rp, Fm, ON                          | 2                          | D, M                      | NH3                 |
| 332                           | AO                    | R7054AD<br>S7054AD<br>R7754AD<br>S7754AD                                                                             | Rp, Fm, FF                          | 2                          | D, M                      | NH3                 |
| 347                           | Eastern               | E453                                                                                                                 | Rp, Fm, ON                          | 2                          |                           | NH3                 |
| 350                           | North                 | 10004S<br>10004M                                                                                                     | Su, ON                              | 1                          |                           | NH3                 |
| 358                           | North                 | 10014S<br>10014M                                                                                                     | Su, ON                              | 1                          | D, M                      | NH3                 |
| 364                           | Willson               | 3024<br>3024S<br>S3024<br>3024SR<br>S3024S<br>3024R<br>S3024R<br>S3024SR<br>S3024SS<br>S3024SSS<br>3024SS<br>3024SSS | Rp, Bm, ON                          | 2                          |                           | NH3                 |
| 365                           | Willson               | 3124<br>3224                                                                                                         | Rp, Bm, FF                          | 2                          |                           | NH3                 |

## CHEMICAL CARTRIDGES - METHYL AMINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 366                           | Willson               | 3034<br>3034S<br>S3034<br>3034R<br>S3034R<br>3034SR<br>S3034S<br>S3034SR<br>S3034SS<br>S3034SSS<br>3034SS<br>3034SSS                         | Rp, Bm, ON                          | 2                          |                           | NH3                 |
| 367                           | Willson               | 3134<br>3234                                                                                                                                 | Rp, Bm, FF                          | 2                          |                           | NH3                 |
| 378                           | Willson               | 302410<br>S302410<br>302410S<br>S302410R<br>302410R<br>S302410SR<br>302410SR<br>S302410SS<br>S302410SSS<br>302410SS<br>302410SSS<br>S302410S | Rp, Bm, ON                          | 2                          | D, M                      | NH3                 |
| 379                           | Willson               | 312410<br>322410                                                                                                                             | Rp, Bm, FF                          | 2                          | D, M                      | NH3                 |
| 384                           | Willson               | 303412<br>S303412<br>303412R<br>S303412R<br>303412S<br>S303412S<br>303412SR<br>S303412SS<br>S303412SSS<br>303412SS<br>303412SSS<br>S30314SR  | Rp, Bm, ON                          | 2                          | H, A                      | NH3                 |

## CHEMICAL CARTRIDGES - METHYL AMINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 385                           | Willson               | 313412<br>323412                                                                                               | Rp, Bm, FF                          | 2                          | H, A                      | NH3                 |
| 419                           | AO                    | R5054HE<br>S5054HE<br>R4054HE<br>S4054HE<br>R6054HE<br>S6054HE<br>R5554HE<br>S5554HE                           | Rp, Fm, ON                          | 2                          | H, A, R                   | NH3                 |
| 420                           | AO                    | R7054HE<br>S7054HE<br>R7754HE<br>S7754HE                                                                       | Rp, Fm, FF                          | 2                          | H, A, R                   | NH3                 |
| 422                           | USD                   | 2104-00<br>2204-00<br>2304-00                                                                                  | Rp, Fm, ON                          | 2                          |                           | NH3                 |
| 423                           | USD                   | 3204-00                                                                                                        | Rp, Fm, ON                          | 2                          |                           | NH3                 |
| 440                           | 3M                    | 7204                                                                                                           | Rp, Fm, ON                          | 2                          |                           | NH3                 |
| 441                           | 3M                    | 7211                                                                                                           | Rp, Fm, ON                          | 2                          | D, M, Z                   | NH3                 |
| 442                           | 3M                    | 7215                                                                                                           | Rp, Fm, ON                          | 2                          | H, A, R                   | NH3                 |
| 457                           | Cover                 | 1482-G106-G208<br>1482-S-G106-G208<br>1482-L-G106-G208<br>1585S-G106-G208<br>1585-G106-G208<br>1585L-G106-G208 | Rp, Fm, ON                          | 2                          | H, A, R                   | NH3                 |
| 463                           | MSA                   | 472751                                                                                                         | Rp, Bm, ON                          | 2                          | D, M                      | NH3                 |

## CHEMICAL CARTRIDGES - METHYL AMINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                    | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 468                           | MSA                   | 472758                                                                | Rp,Bm,ON                            | 2                          | H,A                       | NH3                 |
| 498                           | Pulmosan              | 10417                                                                 | Rp,Fm,FF                            | 1                          |                           | NH3                 |
| 502                           | Pulmosan              | 10429                                                                 | Rp,Fm,FF                            | 1                          | D,M                       | NH3                 |
| 513                           | MSA                   | 469730                                                                | Rp,Fm,ON                            | 1                          |                           | NH3                 |
| 515                           | Pirelli               | 4336.2022                                                             | Rp,Fm,ON                            | 2                          |                           | NH3                 |
| 519                           | Scott                 | 64-AM-H<br>64E-AM-H<br>64M-AM-H<br>64ME-AM-H<br>64S-AM-H<br>64SE-AM-H | Rp,Fm,ON                            | 2                          | H,A,R                     | NH3                 |
| 520                           | Scott                 | 65-AM-H,<br>65S-AM-H                                                  | Rp,Fm,FF                            | 2                          | H,A,R                     | NH3                 |
| 544                           | Safety<br>Supply      | F-200-AM<br>F-160-AM<br>F-800-AM                                      | Rp,Fm,ON                            | 2                          |                           | NH3                 |
| 545                           | Safety<br>Supply      | F-700-AM                                                              | Rp,Fm,FF                            | 2                          |                           | NH3                 |
| 559                           | Willson               | 1524<br>1524R<br>1524SS                                               | Rp,Fm,ON                            | 2                          |                           | NH3                 |
| 560                           | Willson               | 3524<br>3524R<br>3524SS                                               | Rp,Fm,ON                            | 2                          |                           | NH3                 |
| 561                           | Willson               | 1534<br>1534R<br>1534SS                                               | Rp,Fm,ON                            | 2                          |                           | NH3                 |



CHEMICAL CARTRIDGES - METHYL AMINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 562                           | Willson               | 3534<br>3534R<br>3534SS                              | Rp, Fm, ON                          | 2                          |                           | NH3                 |
| 575                           | Willson               | 152410<br>152410R<br>152410SS                        | Rp, Fm, ON                          | 2                          | D, M                      | NH3                 |
| 576                           | Willson               | 352410<br>352410R<br>352410SS                        | Rp, Fm, ON                          | 2                          | D, M                      | NH3                 |
| 581                           | Willson               | 153412<br>153412R<br>153412SS                        | Rp, Fm, ON                          | 2                          | H, A                      | NH3                 |
| 582                           | Willson               | 353412<br>353412R<br>353412SS                        | Rp, Fm, ON                          | 2                          | H, A                      | NH3                 |
| 589                           | Racal                 | BE1/K                                                | PAPR, HH                            | 3                          |                           | NH3                 |
| 590                           | Racal                 | BE3/KC<br>BE7/KC                                     | PAPR, FF                            | 3                          |                           | NH3                 |
| 591                           | Racal                 | BE5/K                                                | PAPR, HH                            | 3                          |                           | NH3                 |
| 592                           | Racal                 | BE6/K                                                | PAPR, HH                            | 3                          |                           | NH3                 |
| 612                           | Racal                 | BE8/K                                                | PAPR, ON                            | 3                          |                           | NH3                 |
| 623                           | Glendale              | GR-1624-50<br>GR-2024-50<br>GR-4024-50<br>GR-8024-50 | Rp, Fm, ON                          | 2                          | H, A, R                   | NH3                 |
| 624                           | Glendale              | GR-7024-50                                           | Rp, Fm, FF                          | 2                          | H, A, R                   | NH3                 |



CHEMICAL CARTRIDGES -- METHYL AMINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)     | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 628                           | Neoterik              | NP-1562-8              | PAPR,ON                             | 3                          |                           | NH3                 |
| 633                           | Racal                 | BE4/K                  | PAPR                                | 3                          |                           | NH3                 |
| 639                           | Neoterik              | NP1664-8<br>NP1564-8   | PAPR                                | 3                          |                           | NH3                 |
| 641                           | Racal                 | BE1/KP3                | PAPR,HH                             | 3                          | H,A,R                     | NH3                 |
| 642                           | Racal                 | BE3/KP3<br>BE7/KP3     | PAPR,FF                             | 3                          | H,A,R                     | NH3                 |
| 643                           | Racal                 | BE4/KP3                | PAPR,HH                             | 3                          | H,A,R                     | NH3                 |
| 644                           | Racal                 | BE5/KP3                | PAPR,HH                             | 3                          | H,A,R                     | NH3                 |
| 645                           | Racal                 | BE6/KP3                | PAPR,HH                             | 3                          | H,A,R                     | NH3                 |
| 646                           | Racal                 | BE8/KP3                | PAPR,ON                             | 3                          | H,A,R                     | NH3                 |
| 658                           | North                 | 7594S/M/L<br>7794S/M/L | Rp,Fm,ON                            | 2                          | D,F,M                     | NH3                 |
| 659                           | North                 | 75BP94M                | Rp,Bm,ON                            | 2                          | D,F,M                     | NH3                 |
| 660                           | North                 | 7694<br>7694S          | Rp,Fm,FF                            | 2                          | D,F,M                     | NH3                 |
| 666                           | Cover                 | 1694-G104-F100         | Rp,Fm,FF                            | 2                          |                           | NH3                 |
| 667                           | Cover                 | 1694-G106-F100         | Rp,Fm,FF                            | 2                          | D,M                       | NH3                 |

CHEMICAL CARTRIDGES - METHYL AMINE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                            | Respirator<br>and Facepiece<br>Type                                                                                | Number<br>of<br>Cartridges                                                  | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------|---------------------|
| 674                | Cover                 | 1694-G106-G208                                | Rp,Fm,FF                                                                                                           | 2                                                                           | H,A,R                     | NH3                 |
| 686                | 3M                    | 7804<br>7804C                                 | Rp,Fm,FF<br>For 7804C Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 |                           | NH3                 |
| 692                | 3M                    | 7811<br>7811C                                 | Rp,Fm,FF<br>For 7811C Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | D,M,Z                     | NH3                 |
| 696                | 3M                    | 7815<br>7815C                                 | Rp,Fm,FF<br>For 7815C Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | H,A,R                     | NH3                 |
| 723                | Willson               | 122417/R/S/SR/SS/SSS<br>S122417/R/S/SR/SS/SSS | ON,Rp,Fm                                                                                                           | 2                                                                           | D,F,M                     | NH3                 |
| 724                | Willson               | 162417<br>172417                              | FF,Rp,Fm                                                                                                           | 2                                                                           | D,F,M                     | NH3                 |
| 725                | Willson               | 152417<br>152417R<br>152417SS                 | ON,Rp,Fm                                                                                                           | 2                                                                           | D,F,M                     | NH3                 |

CHEMICAL CARTRIDGES - METHYL AMINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 726                           | Willson               | 302417/R/S/SR/SS/SSS<br>302417/R/S/SR/SS/SSS | ON,Rp,Bm                            | 2                          | D,F,M                     | NH3                 |
| 727                           | Willson               | 312417<br>322417                             | FF,Rp,Bm                            | 2                          | D,F,M                     | NH3                 |
| 728                           | Willson               | 352417<br>352417R<br>352417SS                | ON,Rp,Bm                            | 2                          | D,F,M                     | NH3                 |

### 3. Chlorine

#### Approval

Approved as respiratory protection against not more than 10 parts per million chlorine.

#### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

E. Chemical Cartridges  
3. Chlorine

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 41                            | MSA                   | 459434<br>461006                                                                                                     | Rp, Fm, Bm, ON                      | 2                          | D, M                      | SO2/HCl<br>CH2-O    |
| 47                            | MSA                   | 459435<br>461007                                                                                                     | Rp, Fm, Bm, ON                      | 2                          | D, M                      | OV/SO2/HCl<br>CH2-O |
| 55                            | Scott                 | 70-CL<br>Replaced by                                                                                                 | Es, MP<br>TC-23C-492                | 1                          |                           |                     |
| 60                            | AO                    | R4052*<br>R5052*<br>R6052*                                                                                           | Rp, Fm, ON                          | 2                          |                           | SO2/HCl             |
| 65                            | North                 | 7503*<br>7503M<br>7703M<br>7503S<br>7703S<br>7503L<br>7703L                                                          | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl          |
| 66                            | North                 | 7513*<br>7513M<br>7713M<br>7513S<br>7713S<br>7513L<br>7713L                                                          | Rp, Fm, ON                          | 2                          | D, M                      | OV/SO2/HCl          |
| 76                            | Willson               | 1225<br>S1225<br>1225S<br>S1225S<br>1225SR<br>S1225SR<br>S1225R<br>S1225SS<br>S1225SSS<br>1225SSS<br>1225R<br>1225SS | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl          |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 77                            | Willson               | 122510<br>122510R<br>122510S<br>122510SR<br>122510SS<br>122510SSS<br>S122510<br>S122510R<br>S122510S<br>S122510SR<br>S122510SS<br>S122510SSS | Rp, Fm, ON                          | 2                          | D, M                      | OV/SO2/HCl          |
| 82                            | AO                    | R4053*<br>R5053*<br>R6053*                                                                                                                   | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl          |
| 85                            | AO                    | R8153<br>S8153                                                                                                                               | Rp, Fm, ON                          | 1                          |                           | OV/SO2/HCl          |
| 104                           | North                 | 75BP03*<br>75BP03M<br>75BP03L                                                                                                                | Rp, Bm, ON                          | 2                          |                           | OV/SO2/HCl          |
| 105                           | North                 | 75BP13*<br>75BP13M<br>75BP13L                                                                                                                | Rp, Bm, ON                          | 2                          | D, M                      | OV/SO2/HCl          |
| 108                           | MSA                   | 460400<br>460378                                                                                                                             | Es, M                               | 1                          | D, M                      | HCl                 |
| 111                           | AO                    | R9722                                                                                                                                        | Es, M                               | 1                          | D, M                      | SO2/HCl             |

CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                                                           |                                     |                            |                           |                     |
| 115                | Scott                 | 6411-0001*<br>6413-0001*<br>6421-0001*<br>6422-0001*<br>6423-0001*<br>6412-0001*<br>64-AG<br>64E-AG<br>64M-AG<br>64ME-AG<br>64S-AG<br>64SE-AG             | Rp, Fm, ON                          | 2                          |                           | SO2/HCl<br>CH2-O    |
| 116                | Scott                 | 6411-0101*<br>6413-0101*<br>6421-0101*<br>6423-0101*<br>6412-0101*<br>6422-0101*<br>64-AG-D<br>64E-AG-D<br>64M-AG-D<br>64ME-AG-D<br>64S-AG-D<br>64SE-AG-D | Rp, Fm, ON                          | 2                          | D, M, Z                   | SO2/HCl<br>CH2-O    |
| 122                | North                 | 7542*<br>7542M*                                                                                                                                           | Rp, Fm, ON                          | 2                          | D, M, Z                   | SO2/HCl             |
| 129                | 3M                    | 8714<br>8720                                                                                                                                              | Su, ON                              | 1                          | D, M<br>8720 only         | SO2/HCl             |
| 141                | Willson               | 1625<br>1725                                                                                                                                              | Rp, Fm, FF                          | 2                          |                           | OV/SO2/HCl          |
| 142                | Willson               | 162510<br>172510                                                                                                                                          | Rp, Fm, FF                          | 2                          | D, M                      | OV/SO2/HCl          |
| 145                | MSA                   | 461849                                                                                                                                                    | Rp, Fm, FF                          | 2                          | D, M                      | SO2/HCl<br>CH2-O    |



## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                 | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM                                                          | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|------------------------------------------------------------------------------------|---------------------|
| 146                           | MSA                   | 461850                                                                                                                                                                                             | Rp,Fm,FF                            | 2                          | D,M                                                                                | OV/SO2/HCl<br>CH2-O |
| 150                           | MSA                   | 461854                                                                                                                                                                                             | Rp,Fm,FF                            | 2                          | H,A                                                                                | SO2/HCl<br>CH2-O    |
| 153                           | MSA                   | 461855                                                                                                                                                                                             | Rp,Fm,FF                            | 2                          | H,A                                                                                | OV/SO2/HCl<br>CH2-O |
| 154                           | MSA                   | 461856                                                                                                                                                                                             | Rp,Fm,FF                            | 2                          | D,F,M,R                                                                            | OV/SO2/HCl<br>CH2-O |
| 156                           | MSA                   | 461835<br>462239                                                                                                                                                                                   | Rp,Fm,Bm,ON                         | 2                          | H,A                                                                                | SO2/HCl<br>CH2-O    |
| 159                           | MSA                   | 460847<br>461013                                                                                                                                                                                   | Rp,Fm,Bm,ON                         | 2                          | H,A                                                                                | OV/SO2/HCl<br>CH2-O |
| 160                           | MSA                   | 460848<br>461014                                                                                                                                                                                   | Rp,Fm,Bm,ON                         | 2                          | D,F,M,R                                                                            | OV/SO2/HCl<br>CH2-O |
| 163                           | Cover                 | 1482-G104<br>1482-S-G104<br>1482-L-G104<br>1482-G104-F100<br>1482-S-G104-F100<br>1482-L-G104-F100<br>1585S-G104<br>1585-G104<br>1585L-G104<br>1585S-G104-F100<br>1585-G104-F100<br>1585L-G104-F100 | Rp,Fm,ON                            | 2                          | D,M,Z<br><br>1482-G104-F100 only<br>1482-S-G104-F100 only<br>1482-L-G104-F100 only | OV/SO2/HCl          |
| 163                           | Sellstrom             | 315-G104<br>315-G104-F100                                                                                                                                                                          | Rp,Fm,ON                            | 2                          | D,M,Z<br>315-G104-F100 only                                                        | OV/SO2/HCl          |
| 163                           | Eastern               | E-452                                                                                                                                                                                              | Rp,Fm,ON                            | 2                          | D,M,Z                                                                              | OV/SO2/HCl          |



## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 164                | Cesco                 | 95RC55<br>95SMRC55                                                                                                                            | Fm, ON                              | 2                          |                           | SO2/HC1             |
| 165                | Cesco                 | 95RC75<br>95SMRC75                                                                                                                            | Rp, Fm, ON                          | 2                          | D, M                      | SO2/HC1             |
| 166                | Cesco                 | 95RC85<br>95SMRC85                                                                                                                            | Fm, ON                              | 2                          |                           | OV/SO2/HC1          |
| 167                | Cesco                 | 95RC105<br>95SMRC105                                                                                                                          | Rp, Fm, ON                          | 2                          | D, M                      | OV/SO2/HC1          |
| 168                | US Safety             | 150T21<br>150L21                                                                                                                              | Fm, ON                              | 2                          |                           | SO2/HC1             |
| 169                | US Safety             | 150T25<br>150L25                                                                                                                              | Rp, Fm, ON                          | 2                          | D, M                      | SO2/HC1             |
| 170                | US Safety             | 150T26<br>150L26                                                                                                                              | Fm, ON                              | 2                          |                           | OV/SO2/HC1          |
| 171                | US Safety             | 150T28<br>150L28                                                                                                                              | Rp, Fm, ON                          | 2                          | D, M                      | OV/SO2/HC1          |
| 172                | Scott                 | 6411-0015*<br>64-OA<br>6413-0015*<br>64E-OA<br>6421-0015*<br>64M-OA<br>6423-0015*<br>64ME-OA<br>6412-0015*<br>64S-OA<br>6422-0015*<br>64SE-OA | Fm, ON                              | 2                          |                           | OV/SO2/HC1<br>CH2-O |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                      | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                                                                         |                                     |                            |                           |                     |
| 174                | Scott                 | 6411-0115*<br>6412-0115*<br>6413-0115*<br>6421-0115*<br>6422-0115*<br>6423-0115*<br>64-OA-D<br>64E-OA-D<br>64M-OA-D<br>64ME-OA-D<br>64S-OA-D<br>64SE-OA-D<br>604032-15* | Fm, ON                              | 2                          | D, M, Z                   | OV/SO2/HCl<br>CH2-O |
| 179                | North                 | 75BP42*<br>75BP42M*                                                                                                                                                     | Rp, Bm, ON                          | 2                          | D, M, Z                   | SO2/HCl             |
| 181                | North                 | 7603<br>7603S<br>7603N*<br>7603SN*                                                                                                                                      | Rp, Fm, FF                          | 2                          |                           | OV/SO2/HCl          |
| 183                | Glendale              | GR-1622<br>GR-2022<br>GR-4022<br>GR-8022                                                                                                                                | Rp, Fm, ON                          | 2                          |                           | SO2/HCl             |
| 184                | Glendale              | GR-1622-10<br>GR-2022-10<br>GR-4022-10<br>GR-8022-10                                                                                                                    | Rp, Fm, ON                          | 2                          | D, M                      | SO2/HCl             |
| 186                | North                 | 7613<br>7613S<br>7613N*<br>7613SN*                                                                                                                                      | Rp, Fm, FF                          | 2                          | D, M                      | OV/SO2/HCl          |
| 189                | North                 | 7642*<br>7642S*<br>7642N*<br>7642SN*                                                                                                                                    | Rp, Fm, FF                          | 2                          | D, M, Z                   | SO2/HCl             |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                          | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 195                           | 3M                    | 8721<br>8722                                                | Su, ON                              | 1                          | D, M<br>8722 only         |                     |
| 196                           | 3M                    | 8723<br>8724                                                | Su, ON                              | 1                          | D, M<br>8724 only         | OV                  |
| 203                           | Pulmosan              | 10012<br>10186<br>10240<br>10273                            | Rp, Fm, ON                          | 1                          |                           | SO2/HCl             |
| 207                           | North                 | 7582M<br>7782M<br>7582S<br>7782S<br>7582L<br>7782L<br>7582* | Rp, Fm, ON                          | 2                          | H, R, A                   | SO2/HCl<br>CH2-O    |
| 208                           | North                 | 75BP82*<br>75BP82M<br>75BP82L                               | Rp, Bm, ON                          | 2                          | H, R, A                   | SO2/HCl<br>CH2-O    |
| 209                           | North                 | 7682<br>7682S                                               | Rp, Fm, FF                          | 2                          | H, R, A                   | SO2/HCl<br>CH2-O    |
| 210                           | North                 | 7583M<br>7783M<br>7583S<br>7783S<br>7583L<br>7783L<br>7583* | Rp, Fm, ON                          | 2                          | H, R, A                   | SO2/HCl/OV          |
| 211                           | North                 | 75BP83*<br>75BP83M<br>75BP83L                               | Rp, Bm, ON                          | 2                          | H, R, A                   | SO2/HCl/OV          |
| 212                           | North                 | 7683S<br>7683                                               | Rp, Fm, FF                          | 2                          | H, R, A                   | SO2/HCl/OV          |

## CHEMICAL CARTRIDGES - CHLORINE

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|--------------------|-----------------------|-------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------------------------|
| TC-23C-            |                       |                                                             |                                     |                            |                           |                                               |
| 216                | 3M                    | 8725<br>8726                                                | Su, ON                              | 1                          | D, M<br>8726 only         | OV/SO <sub>2</sub> /HCl                       |
| 218                | Scott                 | 6470-0101*<br>6480-0101*<br>65-AG-D<br>65S-AG-D             | Rp, Fm, FF                          | 2                          | D, M, Z                   | SO <sub>2</sub> /HCl<br>CH <sub>2</sub> -O    |
| 221                | Scott                 | 6470-0015*<br>6480-0015*<br>65-OA<br>65S-OA                 | Rp, Fm, FF                          | 2                          |                           | OV/SO <sub>2</sub> /HCl<br>CH <sub>2</sub> -O |
| 222                | Scott                 | 6470-0115*<br>6480-0115*<br>65-OA-D<br>65S-OA-D             | Rp, Fm, FF                          | 2                          | D, M, Z                   | OV/SO <sub>2</sub> /HCl<br>CH <sub>2</sub> -O |
| 225                | Scott                 | 6470-0001<br>6480-0001<br>65-AG<br>65S-AG                   | Rp, Fm, FF                          | 2                          |                           | SO <sub>2</sub> /HCl<br>CH <sub>2</sub> -O    |
| 226                | North                 | 7502*<br>7502S<br>7702S<br>7502M<br>7702L<br>7502L<br>7702M | Rp, Fm, ON                          | 2                          |                           | SO <sub>2</sub> /HCl<br>CH <sub>2</sub> -O    |
| 227                | North                 | 75BP02*<br>75BP02M<br>75BP02L                               | Rp, Bm, ON                          | 2                          |                           | SO <sub>2</sub> /HCl<br>CH <sub>2</sub> -O    |
| 228                | North                 | 7602<br>7602S<br>7602N*<br>7602SN*                          | Rp, Fm, FF                          | 2                          |                           | SO <sub>2</sub> /HCl<br>CH <sub>2</sub> -O    |

## CHEMICAL CARTRIDGES -- CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                          | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 229                           | North                 | 7512*<br>7512S<br>7512M<br>7512L<br>7712S<br>7712M<br>7712L | Rp, Fm, ON                          | 2                          | D, M                      | SO2/HCl<br>CH2-O    |
| 230                           | North                 | 75BP12*<br>75BP12M<br>75BP12L                               | Rp, Bm, ON                          | 2                          | D, M                      | SO2/HCl<br>CH2-O    |
| 231                           | North                 | 7612<br>7612S<br>7612N*<br>7612SN*                          | Rp, Fm, FF                          | 2                          | D, M                      | SO2/HCl<br>CH2-O    |
| 232                           | Pulmosan              | 10027<br>10201<br>10252<br>10285                            | Rp, Fm, ON                          | 1                          | D, M                      | SO2/HCl             |
| 233                           | AO                    | R7052*                                                      | Rp, Fm, FF                          | 2                          |                           | SO2/HCl             |
| 234                           | AO                    | R7053*                                                      | Rp, Fm, FF                          | 2                          |                           | OV/SO2/HCl          |
| 241                           | Glendale              | GR-1623<br>GR-2023<br>GR-4023<br>GR-8023                    | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl          |
| 242                           | Glendale              | GR1623-10<br>GR2023-10<br>GR4023-10<br>GR8023-10            | Rp, Fm, ON                          | 2                          | D, M                      | OV/SO2/HCl          |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 246                | Scott                 | 6411-0301*<br>64-AG-F<br>6413-0301*<br>64E-AG-F<br>6421-0301*<br>64M-AG-F<br>6423-0301*<br>64ME-AG-F<br>6412-0301*<br>64S-AG-F<br>6422-0301*<br>64SE-AG-F | Rp, Fm, ON                          | 2                          | D, F, M, Z, R             | SO2/HCl<br>CH2-O    |
| 247                | Scott                 | 6470-0301*<br>6480-0301*<br>65-AG-F<br>65S-AG-F                                                                                                           | Rp, Fm, FF                          | 2                          | D, F, M, Z, R             | SO2/HCl<br>CH2-O    |
| 250                | Scott                 | 6411-0315*<br>64-OA-F<br>6413-0315*<br>64M-OA-F<br>6421-0315*<br>64ME-OA-F<br>6423-0315*<br>64E-OA-F<br>6412-0315*<br>64S-OA-F<br>6422-0315*<br>64SE-OA-F | Rp, Fm, ON                          | 2                          | D, F, M, Z, R             | OV/SO2/HCl<br>CH2-O |
| 251                | Scott                 | 6470-0315*<br>6480-0315*<br>65-OA-F<br>65S-OA-F                                                                                                           | Rp, Fm, FF                          | 2                          | D, F, M, Z, R             | OV/SO2/HCl<br>CH2-O |
| 260                | MSA                   | 466903                                                                                                                                                    | Rp, Fm, ON                          | 2                          | D, M                      | OV/SO2/HCl<br>CH2-O |
| 261                | MSA                   | 466902                                                                                                                                                    | Rp, Bm, ON                          | 2                          | D, M                      | OV/SO2/HCl<br>CH2-O |

CHEMICAL CARTRIDGES - CHLORINE

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|--------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                    |                                     |                            |                           |                     |
| 262                | MSA                   | 466904                                                                                                             | Rp, Fm, FF                          | 2                          | D, M                      | OV/SO2/HCl<br>CH2-O |
| 265                | Cesco                 | 96RC75                                                                                                             | Rp, Fm, FF                          | 2                          | D, M                      | SO2/HCl             |
| 266                | US Safety             | 151T25                                                                                                             | Rp, Fm, FF                          | 2                          | D, M                      | SO2/HCl             |
| 267                | Cesco                 | 96RC105                                                                                                            | Rp, Fm, FF                          | 2                          | D, M                      | OV/SO2/HCl          |
| 268                | US Safety             | 151T28                                                                                                             | Rp, Fm, FF                          | 2                          | D, M                      | OV/SO2/HCl          |
| 281                | AO                    | R4563<br>S4563<br>R5563<br>S5563<br>R6563<br>S6563                                                                 | Rp, Fm, ON                          | 2                          | D, F, M                   | OV/SO2/HCl<br>Pest  |
| 282                | AO                    | R7563<br>S7563                                                                                                     | Rp, Fm, FF                          | 2                          | D, F, M                   | OV/SO2/HCl<br>Pest  |
| 288                | North                 | 7902                                                                                                               | Es, M                               | 1                          |                           | SO2/HCl             |
| 298                | Willson               | 1235<br>1235S<br>S1235<br>1235SR<br>S1235R<br>S1235S<br>S1235SS<br>S1235SSS<br>1235SSS<br>1235R<br>1235SS<br>1235R | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl          |



## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 299                           | Willson               | 123512<br>S123512<br>123512S<br>S123512R<br>123512SR<br>S123512S<br>S123512SS<br>S123512SSS<br>123512SSS<br>123512R<br>123512SS<br>S123512SR | Rp, Fm, ON                          | 2                          | H, A                      | OV/SO2/HCl          |
| 300                           | Willson               | 1635<br>1735                                                                                                                                 | Rp, Fm, FF                          | 2                          |                           | OV/SO2/HCl          |
| 301                           | Willson               | 163512<br>173512                                                                                                                             | Rp, Fm, FF                          | 2                          | H, A                      | OV/SO2/HCl          |
| 306                           | Cesco                 | 95RC50<br>95SMRC50                                                                                                                           | Rp, Fm, ON                          | 2                          | H, R, A                   | SO2/HCl             |
| 307                           | US Safety             | 150T41<br>150L41                                                                                                                             | Rp, Fm, ON                          | 2                          | H, R, A                   | SO2/HCl             |
| 308                           | Cesco                 | 96RC50                                                                                                                                       | Rp, Fm, FF                          | 2                          | H, R, A                   | SO2/HCl             |
| 309                           | US Safety             | 151T41                                                                                                                                       | Rp, Fm, FF                          | 2                          | H, R, A                   | SO2/HCl             |
| 310                           | Cesco                 | 95RC80<br>95SMRC80                                                                                                                           | Rp, Fm, ON                          | 2                          | H, R, A                   | OV/SO2/HCl          |
| 311                           | US Safety             | 150T46<br>150L46                                                                                                                             | Rp, Fm, ON                          | 2                          | H, R, A                   | OV/SO2/HCl          |
| 312                           | Cesco                 | 96RC80                                                                                                                                       | Rp, Fm, FF                          | 2                          | H, R, A                   | OV/SO2/HCl          |
| 313                           | US Safety             | 151T46                                                                                                                                       | Rp, Fm, FF                          | 2                          | H, R, A                   | OV/SO2/HCl          |



## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 318                           | USD                   | 2203-00<br>2103-00<br>2303-00                                                        | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl          |
| 320                           | Pulmosan              | 10015<br>10189<br>10243<br>10276                                                     | Rp, Fm, ON                          | 1                          |                           | OV/SO2/HCl          |
| 324                           | Pulmosan              | 10030<br>10255<br>10204<br>10288                                                     | Rp, Fm, ON                          | 1                          | D, M                      | OV/SO2/HCl          |
| 339                           | AO                    | R4052A<br>S4052A<br>R5052A<br>S5052A<br>R6052A<br>S6052A<br>R5552A<br>S5552A         | Rp, Fm, ON                          | 2                          |                           | SO2/HCl             |
| 340                           | AO                    | R7052A<br>S7052A<br>R7752A<br>S7752A                                                 | Rp, Fm, FF                          | 2                          |                           | SO2/HCl             |
| 341                           | AO                    | R4052AD<br>R5052AD<br>R6052AD<br>S4052AD<br>S5052AD<br>S6052AD<br>R5552AD<br>S5552AD | Rp, Fm, ON                          | 2                          | D, M                      | SO2/HCl             |
| 342                           | AO                    | R7052AD<br>S7052AD<br>R7752AD<br>S7752AD                                             | Rp, Fm, FF                          | 2                          | D, M                      | SO2/HCl             |

CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                      |                                     |                            |                           |                     |
| 343                | AO                    | R4053A<br>S4053A<br>R5053A<br>S5053A<br>R6053A<br>S6053A<br>R5553A<br>S5553A         | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl<br>ClO2  |
| 344                | AO                    | R7053A<br>S7053A<br>R7753A<br>S7753A                                                 | Rp, Bm, FF                          | 2                          |                           | OV/SO2/HCl<br>ClO2  |
| 345                | AO                    | R4053AD<br>S4053AD<br>R5053AD<br>S5053AD<br>R6053AD<br>S6053AD<br>R5553AD<br>S5553AD | Rp, Fm, ON                          | 2                          | D, M                      | OV/SO2/HCl          |
| 346                | AO                    | R7053AD<br>S7053AD<br>R7753AD<br>S7753AD                                             | Rp, Fm, FF                          | 2                          | D, M                      | OV/SO2/HCl          |
| 352                | North                 | 10003S<br>10003M                                                                     | Su, ON                              | 1                          |                           | OV/SO2/HCl          |
| 353                | North                 | 10002S<br>10002M                                                                     | Su, ON                              | 1                          |                           | SO2/HCl             |
| 356                | North                 | 10012S<br>10012M                                                                     | Su, ON                              | 1                          | D, M                      | SO2/HCl             |
| 357                | North                 | 10013S<br>10013M                                                                     | Su, ON                              | 1                          | D, M                      | OV/SO2/HCl          |

CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                      |                                     |                            |                           |                     |
| 359                | Cover                 | 1482-G102<br>1482-S-G102<br>1482-L-G102<br>1585S-G102<br>1585-G102<br>1585L-G102                                     | Rp, Fm, ON                          | 2                          |                           | SO2/HCl             |
| 368                | Willson               | 3025<br>3025S<br>S3025<br>3025R<br>S3025R<br>3025SR<br>S3025S<br>3025SSS<br>S3025SS<br>S305SSS<br>3025SS<br>3025SR   | Rp, Bm, ON                          | 2                          |                           | OV/SO2/HCl          |
| 369                | Willson               | 3125<br>3225                                                                                                         | Rp, Bm, FF                          | 2                          |                           | OV/SO2/HCl          |
| 370                | Willson               | 3035<br>3035S<br>S3035<br>3035R<br>S3035S<br>3035SR<br>S3035R<br>S3035SR<br>S3035SS<br>S3035SSS<br>3035SS<br>3035SSS | Rp, Bm, ON                          | 2                          |                           | OV/SO2/HCl          |
| 371                | Willson               | 3135<br>3235                                                                                                         | Rp, Bm, FF                          | 2                          |                           | OV/SO2/HCl          |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 380                           | Willson               | 302510<br>S302510<br>302510R<br>S302510S<br>302510S<br>S302510R<br>302510SR<br>S302510SR<br>S302510SS<br>S302510SSS<br>302510SS<br>302510SSS | Rp, Bm, ON                          | 2                          | D, M                      | OV/SO2/HCl          |
| 381                           | Willson               | 312510<br>322510                                                                                                                             | Rp, Bm, FF                          | 2                          | D, M                      | OV/SO2/HCl          |
| 386                           | Willson               | 303512<br>303512R<br>303512S<br>303512SR<br>303512SS<br>303512SSS<br>S303512<br>S303512R<br>S303512S<br>S303512SR<br>S303512SS<br>S303512SSS | Rp, Bm, ON                          | 2                          | H, A                      | OV/SO2/HCl          |
| 387                           | Willson               | 313512<br>323512                                                                                                                             | Rp, Bm, FF                          | 2                          | H, A                      | OV/SO2/HCl          |
| 393                           | USD                   | 2133-00*<br>2233-00*<br>2333-00*                                                                                                             | Rp, Fm, ON                          | 2                          | D, F, M, R                | OV/SO2/HCl          |
| 394                           | USD                   | 3233-00*                                                                                                                                     | Rp, Fm, FF                          | 2                          | D, F, M, R                | OV/SO2/HCl          |
| 395                           | USD                   | 2192-00<br>2292-00<br>2392-00                                                                                                                | Rp, Fm, ON                          | 2                          | H, A                      | SO2/HCl             |
| 396                           | USD                   | 3292-00                                                                                                                                      | Rp, Fm, FF                          | 2                          | H, A                      | SO2/HCl             |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor     |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|-------------------------|
| 407                           | Glendale              | GR7022                                                                               | Rp, Fm, FF                          | 2                          |                           | SO2/HCl                 |
| 408                           | Glendale              | GR7022-10                                                                            | Rp, Fm, FF                          | 2                          | D, M                      | SO2/HCl                 |
| 410                           | Glendale              | GR7023                                                                               | Rp, Fm, FF                          | 2                          |                           | OV/SO2/HCl              |
| 411                           | Glendale              | GR7023-10                                                                            | Rp, Fm, FF                          | 2                          | D, M                      | OV/SO2/HCl              |
| 415                           | AO                    | R4052HE<br>S4052HE<br>R5052HE<br>S5052HE<br>R6052HE<br>S6052HE<br>R5552HE<br>S5552HE | Rp, Fm, ON                          | 2                          | H, R, A                   | SO2/HCl                 |
| 416                           | AO                    | R7052HE<br>S7052HE<br>R7752HE<br>S7752HE                                             | Rp, Fm, FF                          | 2                          | H, R, A                   | SO2/HCl                 |
| 417                           | AO                    | R4053HE<br>S4053HE<br>R5053HE<br>S5053HE<br>R6053HE<br>S6053HE<br>R5553HE<br>S5553HE | Rp, Fm, ON                          | 2                          | H, R, A                   | OV/SO2/HCl<br>ClO2/Pest |
| 418                           | AO                    | R7053HE<br>S7053HE<br>R7753HE<br>S7753HE                                             | Rp, Fm, FF                          | 2                          | H, R, A                   | OV/SO2/HCl<br>ClO2/Pest |
| 421                           | Cover                 | 1585S-G104-G208<br>1585-G104-G208<br>1585L-G104-G208                                 |                                     |                            |                           |                         |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                     | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 421                           | Cover                 | 1482-G104-G208<br>1482-S-G104-G208<br>1482-L-G104-G208 | Rp, Fm, ON                          | 2                          | H, R, A                   | OV/SO2/HCl          |
| 429                           | USD                   | 3202-00                                                | Rp, Fm, FF                          | 2                          |                           | SO2/HCl             |
| 430                           | USD                   | 2102-00<br>2202-00<br>2302-00                          | Rp, Fm, ON                          | 2                          |                           | SO2/HCl             |
| 431                           | USD                   | 2112-00<br>2212-00<br>2312-00                          | Rp, Fm, ON                          | 2                          | D, M                      | SO2/HCl             |
| 432                           | USD                   | 3212-00                                                | Rp, Fm, FF                          | 2                          | D, M                      | SO2/HCl             |
| 433                           | USD                   | 2113-00<br>2213-00<br>2313-00                          | Rp, Fm, ON                          | 2                          | D, M                      | OV/SO2/HCl<br>CH2-O |
| 434                           | USD                   | 3213-00                                                | Rp, Fm, ON                          | 2                          | D, M                      | OV/SO2/HCl<br>CH2-O |
| 443                           | 3M                    | 7202                                                   | Rp, Fm, ON                          | 2                          |                           | SO2/HCl             |
| 444                           | 3M                    | 7208                                                   | Rp, Fm, ON                          | 2                          | D, M, Z                   | SO2/HCl             |
| 445                           | 3M                    | 7213                                                   | Rp, Fm, ON                          | 2                          | H, R, A                   | SO2/HCl             |
| 446                           | 3M                    | 7203                                                   | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl          |
| 447                           | 3M                    | 7209                                                   | Rp, Fm, ON                          | 2                          | D, M, Z                   | OV/SO2/HCl          |
| 448                           | 3M                    | 7214                                                   | Rp, Fm, ON                          | 2                          | H, R, A                   | OV/SO2/HCl          |
| 449                           | North                 | 7912                                                   | Es, M                               | 1                          | D, M                      | SO2/HCl             |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 450                           | USD                   | 2193-00<br>2293-00<br>2393-00                                                                                  | Rp, Fm, ON                          | 2                          | H, A                      | OV/SO2/HCl          |
| 451                           | USD                   | 3293-00                                                                                                        | Rp, Fm, FF                          | 2                          | H, A                      | OV/SO2/HCl          |
| 454                           | USD                   | 3203-00                                                                                                        | Rp, Fm, FF                          | 2                          |                           | OV/SO2/HCl<br>CH2-O |
| 459                           | Cover                 | 1482-G102-G208<br>1482-S-G102-G208<br>1482-L-G102-G208<br>1585S-G102-G208<br>1585-G102-G208<br>1585L-G102-G208 | Rp, Fm, ON                          | 2                          | H, R, A                   | SO2/HCl             |
| 461                           | MSA                   | 472749                                                                                                         | Rp, Bm, ON                          | 2                          | D, M                      | SO2/HCl<br>CH2-O    |
| 462                           | MSA                   | 472750                                                                                                         | Rp, Bm, ON                          | 2                          | D, M                      | OV/SO2/HCl<br>CH2-O |
| 466                           | MSA                   | 472756                                                                                                         | Rp, Bm, ON                          | 2                          | H, A                      | OV/SO2/HCl<br>CH2-O |
| 467                           | MSA                   | 472757                                                                                                         | Rp, Bm, ON                          | 2                          | D, F, M, R                | OV/SO2/HCl<br>CH2-O |
| 470                           | MSA                   | 472760                                                                                                         | Rp, Bm, ON                          | 2                          | H, A                      | SO2/HCl<br>CH2-O    |
| 472                           | MSA                   | 472764                                                                                                         | Rp, Bm, ON                          | 2                          | D, M                      | OV/SO2/HCl          |
| 479                           | Racal                 | BE1/B                                                                                                          | PAPR, HH                            | 3                          |                           | HCl                 |
| 480                           | Racal                 | BE5/B                                                                                                          | PAPR, HH                            | 3                          |                           | HCl                 |
| 481                           | Racal                 | BE6/B                                                                                                          | PAPR, HH                            | 3                          |                           | HCl                 |



## CHEMICAL CARTRIDGES -- CHLORINE

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|-------------------------------|-----------------------|-----------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 487                           | Sellstrom             | 315-G102-G208                                                         | Rp, Fm, ON                          | 2                          | H, R, A                   | SO2/HCl             |
| 492                           | Scott                 | 70-AG                                                                 | Es, MP                              | 1                          |                           | HCl/H2S             |
| 496                           | Pulmosan              | 10411                                                                 | Rp, Fm, FF                          | 1                          |                           | SO2/HCl             |
| 497                           | Pulmosan              | 10414                                                                 | Rp, Fm, FF                          | 1                          |                           | OV/SO2/HCl          |
| 500                           | Pulmosan              | 10423                                                                 | Rp, Fm, FF                          | 1                          | D, M                      | SO2/HCl             |
| 501                           | Pulmosan              | 10426                                                                 | Rp, Fm, FF                          | 1                          | D, M                      | OV/SO2/HCl          |
| 511                           | MSA                   | 469728                                                                | Rp, Fm, ON                          | 1                          | D, M                      | OV/SO2/HCl<br>CH2-O |
| 512                           | MSA                   | 469729                                                                | Rp, Fm, ON                          | 1                          | D, M                      | OV/SO2/HCl<br>CH2-O |
| 514                           | MSA                   | 471914<br>476337<br>476338                                            | Es, MP                              | 1                          | D, M                      | SO2/HCl<br>H2S      |
| 516                           | Pirelli               | 4336.2023                                                             | Rp, Fm, ON                          | 2                          |                           | SO2/HCl             |
| 517                           | Scott                 | 64-AG-H<br>64E-AG-H<br>64M-AG-H<br>64ME-AG-H<br>64S-AG-H<br>64SE-AG-H | Rp, Fm, ON                          | 2                          | H, R, A                   | SO2/HCl<br>CH2-O    |
| 518                           | Scott                 | 65-AG-H<br>65S-AG-H                                                   | Rp, Fm, FF                          | 2                          | H, R, A                   | SO2/HCl<br>CH2-O    |



## CHEMICAL CARTRIDGES - CHLORINE

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|-------------------------------|-----------------------|-----------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 521                           | Scott                 | 64-OA-H<br>64E-OA-H<br>64M-OA-H<br>64ME-OA-H<br>64S-OA-H<br>64SE-OA-H             | Rp, Fm, ON                          | 2                          | H, R, A                   | OV/SO2/HCl<br>CH2-O |
| 522                           | Scott                 | 65-OA-H<br>65S-OA-H                                                               | Rp, Fm, FF                          | 2                          | H, R, A                   | OV/SO2/HCl<br>CH2-O |
| 525                           | Scott                 | 64-TEDA-H<br>64E-TEDA-H<br>64M-TEDA-H<br>64ME-TEDA-H<br>64S-TEDA-H<br>64SE-TEDA-H | Rp, Fm, ON                          | 2                          | H, R, A                   |                     |
| 526                           | Scott                 | 65-TEDA-H<br>65S-TEDA-H                                                           | Rp, Fm, FF                          | 2                          |                           |                     |
| 527                           | Pirelli               | 4333.2033                                                                         | Rp, Fm, FF                          | 2                          |                           | SO2/HCl             |
| 532                           | USD                   | 2143-00<br>2243-00<br>2343-00                                                     | Rp, Fm, ON                          | 2                          | D, F, M, R                | OV/SO2/HCl<br>CH2-O |
| 533                           | USD                   | 3243-00                                                                           | Rp, Fm, FF                          | 2                          | D, F, M, R                | OV/SO2/HCl<br>CH2-O |
| 534                           | Racal                 | BE3/BC<br>BE7/BC                                                                  | PAPR, FF                            | 3                          |                           | HCl                 |
| 536                           | Safety<br>Supply      | F-200-AG<br>F-160-AG<br>F-800-AG                                                  | Rp, Fm, ON                          | 2                          |                           | SO2/HCl             |
| 537                           | Safety<br>Supply      | F-700-AG                                                                          | Rp, Fm, FF                          | 2                          |                           | SO2/HCl             |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 542                           | Safety<br>Supply      | F-200-OA<br>F-160-OA<br>F-800-OA             | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl          |
| 543                           | Safety<br>Supply      | F-700-OA                                     | Rp, Fm, FF                          | 2                          |                           | OV/SO2/HCl          |
| 550                           | Safety<br>Supply      | F-160-AG-F-P<br>F-200-AG-F-P<br>F-800-AG-F-P | Rp, Fm, ON                          | 2                          | D, M                      | SO2/HCl             |
| 551                           | Safety<br>Supply      | F-700-AG-F-P                                 | Rp, Fm, FF                          | 2                          | D, M                      | SO2/HCl             |
| 552                           | Safety<br>Supply      | F-160-OA-F-P<br>F-200-OA-F-P<br>F-800-OA-F-P | Rp, Fm, ON                          | 2                          | D, M                      | SO2/HCl             |
| 553                           | Safety<br>Supply      | F-700-OA-F-P                                 | Rp, Fm, FF                          | 2                          | D, M                      | SO2/HCl             |
| 563                           | Willson               | 1525<br>1525R<br>1525SS                      | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl          |
| 564                           | Willson               | 3525<br>3525R<br>3525SS                      | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl          |
| 565                           | Willson               | 1535<br>1535R<br>1535SS                      | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl          |
| 577                           | Willson               | 152510<br>152510R<br>152510SS                | Rp, Fm, ON                          | 2                          | D, M                      | OV/SO2/HCl          |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor     |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|-------------------------|
| 578                           | Willson               | 352510<br>352510R<br>352510SS                                                  | Rp,Fm,ON                            | 2                          | D,M                       | OV/SO2/HCl              |
| 583                           | Willson               | 153512<br>153512R<br>153512SS                                                  | Rp,Fm,ON                            | 2                          | H,A                       | OV/SO2/HCl              |
| 584                           | Willson               | 353512<br>353512R<br>353512SS                                                  | Rp,Fm,ON                            | 2                          | H,A                       | OV/SO2/HCl              |
| 587                           | AO                    | R4563A<br>S4563A<br>R5563A<br>S5563A<br>R6563A<br>S6563A<br>R55563A<br>S55563A | Rp,Fm,ON                            | 2                          | D,F,M                     | OV/SO2/HCl<br>ClO2/Pest |
| 588                           | AO                    | R7563A<br>S7563A<br>R77563A<br>S77563A                                         | Rp,Fm,FF                            | 2                          | D,F,M                     | OV/SO2/HCl<br>ClO2/Pest |
| 593                           | Racal                 | BE1/E                                                                          | PAPR,HH                             | 3                          |                           | SO2/HCl                 |
| 594                           | Racal                 | BE3/EC<br>BE7/EC                                                               | PAPR,FF                             | 3                          |                           | SO2/HCl                 |
| 595                           | Racal                 | BE5/E                                                                          | PAPR,HH                             | 3                          |                           | SO2/HCl                 |
| 596                           | Racal                 | BE6/E                                                                          | PAPR,HH                             | 3                          |                           | SO2/HCl                 |
| 597                           | Racal                 | BE1/EP3                                                                        | PAPR,HH                             | 3                          | H,R,A                     | SO2/HCl                 |
| 598                           | Racal                 | BE3/EP3<br>BE7/EP3                                                             | PAPR,FF                             | 3                          | H,R,A                     | SO2/HCl                 |

## CHEMICAL CARTRIDGES -- CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 599                           | Racal                 | BE5/EP3                                              | PAPR,HH                             | 3                          | H,R,A                     | SO2/HCl             |
| 600                           | Racal                 | BE6/EP3                                              | PAPR,HH                             | 1                          | H,R,A                     | SO2/HCl             |
| 601                           | AO                    | R9722A                                               | Es,MP                               | 1                          |                           | SO2/HCl             |
| 603                           | Racal                 | BE17/P3                                              | PAPR,HH                             | 3                          | H,R,A                     | SO2/HCl             |
| 604                           | AO                    | R9722E                                               | Es,MP                               | 1                          |                           |                     |
| 605                           | Racal                 | BE1/AE                                               | PAPR,HH                             | 3                          |                           | OV/SO2/HCl          |
| 606                           | Racal                 | BE3/AE<br>BE7/AE                                     | PAPR,FF                             | 3                          |                           | OV/SO2/HCl          |
| 607                           | Racal                 | BE5/AE                                               | PAPR,HH                             | 3                          |                           | OV/SO2/HCl          |
| 608                           | Racal                 | BE6/AE                                               | PAPR,HH                             | 3                          |                           | OV/SO2/HCl          |
| 610                           | Racal                 | BE8/B                                                | PAPR,ON                             | 3                          |                           | HCl                 |
| 613                           | Racal                 | BE8/E                                                | PAPR,ON                             | 3                          |                           | SO2/HCl             |
| 614                           | Racal                 | BE8/EP3                                              | PAPR,ON                             | 3                          | H,R,A                     | SO2/HCl             |
| 615                           | Racal                 | BE8/AE                                               | PAPR,ON                             | 3                          |                           | OV/SO2/HCl          |
| 619                           | Glendale              | GR-1622-50<br>GR-2022-50<br>GR-4022-50<br>GR-8022-50 | Rp,Fm,ON                            | 2                          | H,R,A                     | SO2/HCl             |
| 620                           | Glendale              | GR-7022-50                                           | Rp,Fm,FF                            | 2                          | H,R,A                     | SO2/HCl             |

CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 621                           | Glendale              | GR-2023-50<br>GR-8023-50<br>GR-1623-50<br>GR-4023-50 | Rp, Fm, ON                          | 2                          | H, R, A                   | OV/SO2/HCl          |
| 622                           | Glendale              | GR-7023-50                                           | Rp, Fm, FF                          | 2                          | H, R, A                   | OV/SO2/HCl          |
| 626                           | Neoterik              | NP1562-7                                             | PAPR                                | 3                          |                           | OV/SO2/HCl          |
| 627                           | Neoterik              | NP1562-6                                             | PAPR, ON                            | 3                          |                           | SO2/HCl             |
| 629                           | MSA                   | 472959                                               | Rp, Bm, ON                          | 2                          |                           | Mercury             |
| 631                           | Racal                 | BE4/B                                                | PAPR, HH                            | 3                          |                           | HCl                 |
| 634                           | Racal                 | BE4/E                                                | PAPR, HH                            | 3                          |                           | SO2/HCl             |
| 635                           | Racal                 | BE4/EP3                                              | PAPR, HH                            | 3                          | H, R, A                   | SO2/HCl             |
| 636                           | Racal                 | BE4/AE                                               | PAPR, HH                            | 3                          |                           | OV/SO2/HCl          |
| 638                           | Neoterik              | NP1664-7<br>NP1564-7                                 | PAPR, FF                            | 3                          |                           | OV/SO2/HCl          |
| 640                           | Neoterik              | NP1664-6<br>NP1564-6                                 | PAPR, FF                            | 3                          |                           | SO2/HCl             |
| 647                           | Racal                 | BE3/AEP3<br>BE7/AEP3                                 | PAPR, FF                            | 3                          | H, R, A                   | OV/SO2/HCl          |
| 648                           | Racal                 | BE8/AEP3                                             | PAPR, ON                            | 3                          | H, R, A                   | OV/SO2/HCl          |
| 652                           | North                 | 7592S, M, L<br>7792S, M, L                           | Rp, Fm, ON                          | 2                          | D, F, M                   | SO2/HCl<br>CH2-O    |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 653                           | North                 | 75BP92M<br>75BP92L                   | Rp, Bm, ON                          | 2                          | D, F, M                   | SO2/HCl<br>CH2-O    |
| 654                           | North                 | 7692<br>7692S                        | Rp, Fm, FF                          | 2                          | D, F, M                   | SO2/HCl<br>CH2-O    |
| 655                           | North                 | 7593S/M/L<br>7793S/M/L               | Rp, Fm, ON                          | 2                          | D, F, M                   | OV/SO2/HCl          |
| 656                           | North                 | 75BP93M<br>75BP93L                   | Rp, Bm, ON                          | 2                          | D, F, M                   | OV/SO2/HCl          |
| 657                           | North                 | 7693<br>7693S                        | Rp, Fm, FF                          | 2                          | D, F, M                   | OV/SO2/HCl          |
| 664                           | Cover                 | 1694-G104                            | Rp, Fm, FF                          | 2                          |                           | OV/SO2/HCl          |
| 665                           | Cover                 | 1694-G104-F100                       | Rp, Fm, FF                          | 2                          | D, M, Z                   | OV/SO2/HCl          |
| 670                           | Cover                 | 1694-G104-G208                       | Rp, Fm, FF                          | 2                          | H, R, A                   | OV/SO2/HCl          |
| 671                           | Cover                 | 1694-G102                            | Rp, Fm, FF                          | 2                          |                           | SO2/HCl             |
| 673                           | Cover                 | 1694-G102-G208                       | Rp, Fm, FF                          | 2                          | H, R, A                   | SO2/HCl             |
| 678                           | Eastern               | 287                                  | Rp, Fm, ON                          | 2                          | H, R, A                   | OV/SO2/HCl          |
| 679                           | AO                    | R7070A<br>S7070A<br>R7770A<br>S7770A | Rp, Fm, FF                          | 2                          |                           | OV/SO2/HCl<br>ClO2  |
| 680                           | USD                   | 2195-00<br>2295-00<br>2395-00        | Rp, ON                              | 2                          | H, A                      |                     |



CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s) | Respirator<br>and Facepiece<br>Type                                                                                 | Number<br>of<br>Cartridges                                                      | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|--------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------|---------------------|
| 681                | USD                   | 3295-00            | Rp,FF                                                                                                               | 2                                                                               | H,A                       |                     |
| 684                | 3M                    | 7802<br>7802C      | Rp,Fm,FF<br>For 7802C Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75  | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 |                           | SO2/HCl             |
| 685                | 3M                    | 7803<br>7803C      | Rp,Fm,FF<br>For 7803C Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75  | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 |                           | SO2/HCl<br>OV       |
| 689                | 3M                    | 7808<br>7808C      | Rp,Fm,FF<br>(For 7808C Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | D,M,Z                     | SO2/HCl             |
| 690                | 3M                    | 7809<br>7809C      | Rp,Fm,FF<br>For 7809C Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75  | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | D,M,Z                     | SO2/HCl<br>OV       |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                        | Respirator<br>and Facepiece<br>Type                                                                                | Number<br>of<br>Cartridges                                                  | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------|---------------------|
| 694                | 3M                    | 7813<br>7813C                             | Rp,Fm,FF<br>For 7813C Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | H,R,A                     | SO2/HCl             |
| 695                | 3M                    | 7814<br>7814C                             | Rp,Fm,FF<br>For 7814C Combination Type C, CF<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | H,R,A                     | SO2/HCl<br>OV       |
| 699                | Willson               | 1226/R/S/SR/SS/SSS<br>S1226/R/S/SR/SS/SSS | ON,Rp,Fm                                                                                                           | 2                                                                           |                           | SO2/HCl<br>CH2-O    |
| 700                | Willson               | 1626<br>1726                              | FF,Rp,Fm                                                                                                           | 2                                                                           |                           | SO2/HCl<br>CH2-O    |
| 701                | Willson               | 1526<br>1526R<br>1526SS                   | ON,Rp,Fm                                                                                                           | 2                                                                           |                           | SO2/HCl<br>CH2-O    |
| 702                | Willson               | 3026/R/S/SR/SS/SSS<br>3026/R/S/SR/SS/SSS  | ON,Rp,Bm                                                                                                           | 2                                                                           |                           | SO2/HCl<br>CH2-O    |
| 703                | Willson               | 3126, 3226                                | FF,Bm,Rp                                                                                                           | 2                                                                           |                           | SO2/HCl<br>CH2-O    |
| 704                | Willson               | 3526<br>3526R<br>3526SS                   | ON,Bm,Rp                                                                                                           | 2                                                                           |                           | SO2/HCl<br>CH2-O    |



## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 705                | Willson               | 122610/R/S/SR/SS/SSS<br>S122610/R/S/SR/SS/SSS | ON,Rp,Fm                            | 2                          | D,M                       | SO2/HCl<br>CH2-O    |
| 706                | Willson               | 152610<br>152610R<br>152610SS                 | ON,Rp,Fm                            | 2                          | D,M                       | SO2/HCl<br>CH2-O    |
| 707                | Willson               | 162610<br>172610                              | FF,Rp,Fm                            | 2                          | D,M                       | SO2/HCl<br>CH2-O    |
| 708                | Willson               | 302610/R/S/SR/SS/SSS<br>S302610/R/S/SR/SS/SSS | ON,Rp,Bm                            | 2                          | D,M                       | SO2/HCl<br>CH2-O    |
| 709                | Willson               | 312610<br>322610                              | FF,Rp,Bm                            | 2                          | D,M                       | SO2/HCl/<br>CH2-O   |
| 710                | Willson               | 352610<br>352610R<br>352610SS                 | ON,Rp,Bm                            | 2                          | D,M                       | SO2/HCl<br>CH2-O    |
| 711                | Willson               | 122617/R/S/SR/SS/SSS<br>S122617/R/S/SR/SS/SSS | ON,Rp,Fm                            | 2                          | D,F,M                     | SO2/HCl<br>CH2-O    |
| 712                | Willson               | 162617<br>172617                              | FF,Rp,Fm                            | 2                          | D,F,M                     | SO2/HCl<br>CH2-O    |
| 713                | Willson               | 152617<br>152617R<br>152617SS                 | FF,Rp,Fm                            | 2                          | D,F,M                     | SO2/HCl<br>CH2-O    |
| 714                | Willson               | 302617/R/S/SR/SS/SSS<br>S302617/R/S/SR/SS/SSS | ON,Rp,Bm                            | 2                          | D,F,M                     | SO2/HCl<br>CH2-O    |
| 715                | Willson               | 312617<br>322617                              | FF,Rp,Bm                            | 2                          | D,F,M                     | SO2/HCl/<br>CH2-O   |

## CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 716                           | Willson               | 352617<br>352617R<br>352617SS                 | ON, Rp, Bm                          | 2                          | D, F, M                   | SO2/HCl<br>CH2-O    |
| 717                           | Willson               | 122517/R/S/SR/SS/SSS<br>S122517/R/S/SR/SS/SSS | ON, Rp, Fm                          | 2                          | D, F, M                   | SO2/HCl/OV          |
| 718                           | Willson               | 162517<br>172517                              | FF, Rp, Fm                          | 2                          | D, F, M                   | SO2/HCl/OV          |
| 719                           | Willson               | 152517<br>152517R<br>152517SS                 | ON, Rp, Fm                          | 2                          | D, F, M                   | SO2/HCl/OV          |
| 720                           | Willson               | 302517/R/S/SR/SS/SSS<br>S302517/R/S/SR/SS/SSS | ON, Rp, Bm                          | 2                          | D, F, M                   | SO2/HCl/OV          |
| 721                           | Willson               | 312517<br>322517                              | FF, Rp, Bm                          | 2                          | D, F, M                   | SO2/HCl/OV          |
| 722                           | Willson               | 352517<br>352517R<br>352517SS                 | ON, Rp, Bm                          | 2                          | D, F, M                   | SO2/HCl/OV          |

#### 4. Hydrogen Chloride

##### Approval

Approved as respiratory protection against not more than 50 parts per million hydrogen chloride.

##### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

E. Chemical Cartridges  
4. Hydrogen Chloride

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                      |                                     |                            |                           |                     |
| 41                 | MSA                   | 459434<br>461006                                                                                                     | Rp,Fm,Bm, ON                        | 2                          | DM                        | SO2/Cl/<br>CH2-O    |
| 47                 | MSA                   | 459435<br>461007                                                                                                     | Rp,Fm,Bm, ON                        | 2                          | DM                        | OV/SO2/Cl<br>CH2-O  |
| 60                 | AO                    | R4052*<br>R5052*<br>R6052*                                                                                           | Rp,Fm, ON                           | 2                          |                           | SO2/Cl              |
| 65                 | North                 | 7503*<br>7503M<br>7703M<br>7503S<br>7703S<br>7503L<br>7703L                                                          | Rp,Fm, ON                           | 2                          |                           | OV/SO2/Cl           |
| 66                 | North                 | 7513*<br>7513M<br>7713M<br>7513S<br>7713S<br>7513L<br>7713L                                                          | Rp,Fm, ON                           | 2                          | DM                        | OV/SO2/Cl           |
| 76                 | Willson               | 1225<br>S1225<br>1225S<br>S1225S<br>1225SR<br>S1225SR<br>S1225R<br>S1225SS<br>S1225SSS<br>1225SSS<br>1225R<br>1225SS | Rp,Fm, ON                           | 2                          |                           | OV/SO2/Cl           |

## CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 77                            | Willson               | 122510<br>122510R<br>122510S<br>122510SR<br>122510SS<br>122510SSS<br>S122510<br>S122510R<br>S122510S<br>S122510SR<br>S122510SS<br>S122510SSS  | Rp,Fm, ON                           | 2                          | DM                        | OV/SO2/Cl           |
| 82                            | AO                    | R4053*<br>R5053*<br>R6053*                                                                                                                    | Rp,Fm, ON                           | 2                          |                           | OV/SO2/Cl           |
| 85                            | AO                    | R8153<br>S8153                                                                                                                                | Rp,Fm, ON                           | 1                          |                           | OV/SO2/Cl           |
| 104                           | North                 | 75BP03*<br>75BP03M<br>75BP03L                                                                                                                 | Rp,Bm, ON                           | 2                          |                           | OV/SO2/Cl           |
| 105                           | North                 | 75BP13*<br>75BP13M<br>75BP13L                                                                                                                 | Rp,Bm, ON                           | 2                          | DM                        | OV/SO2/Cl           |
| 111                           | AO                    | R9722                                                                                                                                         | Es, M                               | 1                          | DM                        | SO2/Cl              |
| 115                           | Scott                 | 6411-0001*<br>6413-0001*<br>6421-0001*<br>6423-0001*<br>6412-0001*<br>6422-0001*<br>64-AG<br>64E-AG<br>64M-AG<br>64ME-AG<br>64S-AG<br>64SE-AG | Rp,Fm, ON                           | 2                          |                           | SO2/Cl<br>CH2-O     |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                     | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 116                           | Scott                 | 6411-0101*<br>6413-0101*<br>6421-0101*<br>6423-0101*<br>6412-0101*<br>6422-0101*<br>G4-AG-D<br>64E-AG-D<br>64M-AG-D<br>64ME-AG-D<br>64S-AG-D<br>64SE-AG-D<br>64032-01* | Rp,Fm, ON                           | 2                          | DMZ                       | SO2/Cl<br>CH2-O     |
| 122                           | North                 | 7542*<br>7542M*                                                                                                                                                        | Rp,Fm, ON                           | 2                          | DMZ                       | SO2/Cl              |
| 129                           | 3M                    | 8714<br>8720                                                                                                                                                           | Su, ON                              | 1                          | DM<br>8720 only           | SO2/Cl              |
| 141                           | Willson               | 1625<br>1725                                                                                                                                                           | Rp,Fm, FF                           | 2                          |                           | OV/SO2/Cl           |
| 142                           | Willson               | 162510<br>172510                                                                                                                                                       | Rp,Fm, FF                           | 2                          | DM                        | OV/SO2/Cl           |
| 145                           | MSA                   | 461849                                                                                                                                                                 | Rp,Fm, FF                           | 2                          | DM                        | SO2/Cl<br>CH2-O     |
| 146                           | MSA                   | 461850                                                                                                                                                                 | Rp,Fm, FF                           | 2                          | DM                        | OV/SO2/Cl<br>CH2-O  |
| 150                           | MSA                   | 461854                                                                                                                                                                 | Rp,Fm, FF                           | 2                          | HA                        | SO2/Cl<br>CH2-O     |
| 153                           | MSA                   | 461855                                                                                                                                                                 | Rp,Fm, FF                           | 2                          | HA                        | OV/SO2/Cl<br>CH2-O  |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                 | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM                                                          | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|------------------------------------------------------------------------------------|---------------------|
| 154                           | MSA                   | 461856                                                                                                                                                                                             | Rp, Fm, FF                          | 2                          | DFMR                                                                               | OV/SO2/Cl<br>CH2-O  |
| 156                           | MSA                   | 461835<br>462239                                                                                                                                                                                   | Rp, Fm, Bm, ON                      | 2                          | HA                                                                                 | SO2/Cl<br>CH2-O     |
| 159                           | MSA                   | 460847<br>461013                                                                                                                                                                                   | Rp, Fm, Bm, ON                      | 2                          | HA                                                                                 | OV/SO2/Cl<br>CH2-O  |
| 160                           | MSA                   | 460848<br>461014                                                                                                                                                                                   | Rp, Fm, Bm, ON                      | 2                          | DFMR                                                                               | OV/SO2/Cl<br>CH2-O  |
| 163                           | Cover                 | 1482-G104<br>1482-S-G104<br>1482-L-G104<br>1482-G104-F100<br>1482-S-G104-F100<br>1482-L-G104-F100<br>1585S-G104<br>1585-G104<br>1585L-G104<br>1585S-G104-F100<br>1585-G104-F100<br>1585L-G104-F100 | Rp, Fm, ON                          | 2                          | DMZ<br><br>1482-G-104-F100 only<br>1482-S-G104-F100 only<br>1482-L-G-104-F100 only | OV/SO2/Cl           |
| 163                           | Sellstrom             | 315-G104<br>315-G104-F100                                                                                                                                                                          | Rp, Fm, ON                          | 2                          | DMZ<br>315-G104-F100 only                                                          | OV/SO2/Cl           |
| 163                           | Eastern               | E452                                                                                                                                                                                               | Rp, Fm, ON                          | 2                          | DMZ                                                                                | OV/SO2/Cl           |
| 164                           | Cesco                 | 95RC55<br>95SMRC55                                                                                                                                                                                 | Fm, ON                              | 2                          |                                                                                    | SO2/Cl              |
| 165                           | Cesco                 | 95RC75<br>95SMRC75                                                                                                                                                                                 | Rp, Fm, ON                          | 2                          | DM                                                                                 | SO2/Cl              |
| 166                           | Cesco                 | 95RC85<br>95SMRC85                                                                                                                                                                                 | Fm, ON                              | 2                          |                                                                                    | OV/SO2/Cl           |



CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                      | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor                        |
|-------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|--------------------------------------------|
| 167                           | Cesco                 | 95RC105<br>95SMRC105                                                                                                                                                    | Rp, Fm, ON                          | 2                          | DM                        | OV/SO2/Cl                                  |
| 168                           | US Safety             | 150T21<br>150L21                                                                                                                                                        | Fm, ON                              | 2                          |                           | SO2/Cl                                     |
| 169                           | US Safety             | 150T25<br>150L25                                                                                                                                                        | Rp, Fm, ON                          | 2                          | DM                        | SO2/Cl                                     |
| 170                           | US Safety             | 150T26<br>150L26                                                                                                                                                        | Fm, ON                              | 2                          |                           | OV/SO2/Cl                                  |
| 171                           | US Safety             | 150T28<br>150L28                                                                                                                                                        | Rp, Fm, ON                          | 2                          | DM                        | OV/SO2/Cl                                  |
| 172                           | Scott                 | 6411-0015*<br>6412-0015*<br>6413-0015*<br>6421-0015*<br>6422-0015*<br>6423-0015*<br>64-OA<br>64E-OA<br>64M-OA<br>64ME-OA<br>64S-OA<br>64SE-OA                           | Fm, ON                              | 2                          |                           | OV/SO2/Cl<br><br><br><br><br><br><br>CH2-O |
| 174                           | Scott                 | 6411-0115*<br>6412-0115*<br>6413-0115*<br>6421-0115*<br>6422-0115*<br>6423-0115*<br>64-OA-D<br>64E-OA-D<br>64M-OA-D<br>64ME-OA-D<br>64S-OA-D<br>64SE-OA-D<br>604032-15* | Fm, ON                              | 2                          | DMZ                       | OV/SO2/Cl<br>CH2-O                         |



## CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                          | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 179                           | North                 | 75BP42*<br>75BP42M*                                         | Rp,Bm, ON                           | 2                          | DMZ                       | SO2/Cl              |
| 181                           | North                 | 7603<br>7603S<br>7603N*<br>7603SN*                          | Rp,Fm, FF                           | 2                          |                           | OV/SO2/Cl           |
| 183                           | Glendale              | GR-1622<br>GR-2022<br>GR-4022<br>GR-8022                    | Rp,Fm, ON                           | 2                          |                           | SO2/Cl              |
| 184                           | Glendale              | GR-1622-10<br>GR-2022-10<br>GR-4022-10<br>GR-8022-10        | Rp,Fm, ON                           | 2                          | DM                        | SO2/Cl              |
| 186                           | North                 | 7613<br>7613S<br>7613N*<br>7613SN*                          | Rp,Fm, FF                           | 2                          | DM                        | OV/SO2/Cl           |
| 189                           | North                 | 7642*<br>7642S*<br>7642N*<br>7642SN*                        | Rp,Fm, FF                           | 2                          | DMZ                       | SO2/Cl              |
| 203                           | Pulmosan              | 10012<br>10186<br>10240<br>10273                            | Rp,Fm, ON                           | 1                          |                           | SO2/Cl              |
| 207                           | North                 | 7582M<br>7782M<br>7582S<br>7782S<br>7582L<br>7782L<br>7582* | Rp,Fm, ON                           | 2                          | HRA                       | SO2/Cl<br>CH2-O     |

## CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                          | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 208                           | North                 | 75BP82*<br>75BP82M<br>75BP82L                               | Rp,Bm, ON                           | 2                          | HRA                       | SO2/C1<br>CH2-O     |
| 209                           | North                 | 7682<br>7682S                                               | Rp,Fm, FF                           | 2                          | HRA                       | SO2/C1<br>CH2-O     |
| 210                           | North                 | 7583M<br>7783M<br>7583S<br>7783S<br>7583L<br>7783L<br>7583* | Rp,Fm, ON                           | 2                          | HRA                       | OV/SO2/C1           |
| 211                           | North                 | 75BP83*<br>75BP83M<br>75BP83L                               | Rp,Bm, ON                           | 2                          | HRA                       | OV/SO2/C1           |
| 212                           | North                 | 7683S<br>7683                                               | Rp,Fm, FF                           | 2                          | HRA                       | OV/SO2/C1           |
| 216                           | 3M                    | 8725<br>8726                                                | Su, ON                              | 1                          | DM<br>8726 only           | OV/SO2/C1           |
| 218                           | Scott                 | 6470-0101*<br>6480-0101*<br>65-AG-D<br>65S-AG-D             | Rp,Fm, FF                           | 2                          | DMZ                       | SO2/C1<br>CH2-O     |
| 221                           | Scott                 | 6470-0015*<br>6480-0015*<br>65-OA<br>65S-OA                 | Rp,Fm, FF                           | 2                          |                           | OV/SO2/C1<br>CH2-O  |
| 222                           | Scott                 | 6470-0115*<br>6480-0115*<br>65-OA-D<br>65S-OA-D             | Rp,Fm, FF                           | 2                          | DMZ                       | OV/SO2/C1<br>CH2-O  |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                          | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 225                           | Scott                 | 6470-0001<br>6480-0001<br>65-AG<br>65S-AG                   | Rp,Fm, FF                           | 2                          |                           | SO2/Cl<br>CH2-O     |
| 226                           | North                 | 7502*<br>7502S<br>7702S<br>7502M<br>7702L<br>7502L<br>7702M | Rp,Fm, ON                           | 2                          |                           | SO2/Cl<br>CH2-O     |
| 227                           | North                 | 75BP02*<br>75BP02M<br>75BP02L                               | Rp,Bm, ON                           | 2                          |                           | SO2/Cl<br>CH2-O     |
| 228                           | North                 | 7602<br>7602S<br>7602N*<br>7602SN*                          | Rp,Fm, FF                           | 2                          |                           | SO2/Cl<br>CH2-O     |
| 229                           | North                 | 7512*<br>7512S<br>7512M<br>7512L<br>7712S<br>7712M<br>7712L | Rp,Fm, ON                           | 2                          | DM                        | SO2/Cl<br>CH2-O     |
| 230                           | North                 | 75BP12*<br>75BP12M<br>75BP12L                               | Rp,Bm, ON                           | 2                          | DM                        | SO2/Cl<br>CH2-O     |
| 231                           | North                 | 7612<br>7612S<br>7612N*<br>7612SN*                          | Rp,Fm, FF                           | 2                          | DM                        | SO2/Cl<br>CH2-O     |
| 232                           | Pulmosan              | 10027<br>10201<br>10252<br>10285                            | Rp,Fm, ON                           | 1                          | DM                        | SO2/Cl              |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 233                | AO                    | R7052*                                                                                                                                                    | Rp,Fm, FF                           | 2                          |                           | SO2/Cl              |
| 234                | AO                    | R7053*                                                                                                                                                    | Rp,Fm, FF                           | 2                          |                           | OV/SO2/Cl           |
| 241                | Glendale              | GR-1623<br>GR-2023<br>GR-4023<br>GR-8023                                                                                                                  | Rp,Fm, ON                           | 2                          |                           | OV/SO2/Cl           |
| 242                | Glendale              | GR1623-10<br>GR2023-10<br>GR4023-10<br>GR8023-10                                                                                                          | Rp,Fm, ON                           | 2                          | DM                        | OV/SO2/Cl           |
| 246                | Scott                 | 6411-0301*<br>64-AG-F<br>6413-0301*<br>64E-AG-F<br>6421-0301*<br>64M-AG-F<br>6423-0301*<br>64ME-AG-F<br>6412-0301*<br>64S-AG-F<br>6422-0301*<br>64SE-AG-F | Rp,Fm, ON                           | 2                          | DFMZR                     | SO2/Cl<br>CH2-O     |
| 247                | Scott                 | 6470-0301*<br>6480-0301*<br>65-AG-F<br>65S-AG-F                                                                                                           | Rp,Fm, FF                           | 2                          | DFMZR                     | SO2/Cl<br>CH2-O     |
| 250                | Scott                 | 6411-0315*<br>6412-0315*<br>6413-0315*<br>6421-0315*<br>6422-0315*<br>6423-0315*<br>64-OA-F<br>64M-OA-F<br>64ME-OA-F<br>64E-OA-F<br>64S-OA-F<br>64SE-OA-F | Rp,Fm, ON                           | 2                          | DFMZR                     | OV/SO2/Cl<br>CH2-O  |

## CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                 | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 251                           | Scott                 | 6470-0315*<br>6480-0315*<br>65-OA-F<br>65S-OA-F    | Rp,Fm, FF                           | 2                          | DFMZR                     | OV/SO2/Cl<br>CH2-O  |
| 260                           | MSA                   | 466903                                             | Rp,Fm, ON                           | 2                          | DM                        | OV/SO2/Cl<br>CH2-O  |
| 261                           | MSA                   | 466902                                             | Rp,Bm, ON                           | 2                          | DM                        | OV/SO2/Cl<br>CH2-O  |
| 262                           | MSA                   | 466904                                             | Rp,Fm, FF                           | 2                          | DM                        | OV/SO2/Cl<br>CH2-O  |
| 265                           | Cesco                 | 96RC75                                             | Rp,Fm, FF                           | 2                          | DM                        | SO2/Cl              |
| 266                           | US Safety             | 151T25                                             | Rp,Fm, FF                           | 2                          | DM                        | SO2/Cl              |
| 267                           | Cesco                 | 96RC105                                            | Rp,Fm, FF                           | 2                          | DM                        | OV/SO2/Cl           |
| 268                           | US Safety             | 151T28                                             | Rp,Fm, FF                           | 2                          | DM                        | OV/SO2/Cl           |
| 281                           | AO                    | R4563<br>S4563<br>R5563<br>S5563<br>R6563<br>S6563 | Rp,Fm, ON                           | 2                          | DFM                       | OV/SO2/Cl<br>Pest   |
| 282                           | AO                    | R7563<br>S7563                                     | Rp,Fm, FF                           | 2                          | DFM                       | OV/SO2/Cl<br>Pest   |
| 288                           | North                 | 7902                                               | Es, M                               | 1                          |                           | SO2/Cl              |

## CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 298                           | Willson               | 1235<br>1235R<br>1235S<br>1235SR<br>1235SS<br>1235SSS<br>S1235<br>S1235R<br>S1235S<br>S1235SR<br>S1235SS<br>S1235SSS                         | Rp, Fm, ON                          | 2                          |                           | OV/SO2/Cl           |
| 299                           | Willson               | 123512<br>123512R<br>123512S<br>123512SR<br>123512SS<br>123512SSS<br>S123512<br>S123512R<br>S123512S<br>S123512SR<br>S123512SS<br>S123512SSS | Rp, FM, ON                          | 2                          | HA                        | OV/SO2/Cl           |
| 300                           | Willson               | 1635<br>1735                                                                                                                                 | Rp, FM, FF                          | 2                          |                           | OV/SO2/Cl           |
| 301                           | Willson               | 163512<br>173512                                                                                                                             | Rp, FM, FF                          | 2                          | HA                        | OV/SO2/Cl           |
| 306                           | Cesco                 | 95RC50<br>95SMRC50                                                                                                                           | Rp, FM, ON                          | 2                          | HRA                       | SO2/Cl              |
| 307                           | US Safety             | 150T41<br>150L41                                                                                                                             | Rp, FM, ON                          | 2                          | HRA                       | SO2/Cl              |
| 308                           | Cesco                 | 96RC50                                                                                                                                       | Rp, FM, FF                          | 2                          | HRA                       | SO2/Cl              |
| 309                           | US Safety             | 151T41                                                                                                                                       | Rp, FM, FF                          | 2                          | HRA                       | SO2/Cl              |

## CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 310                           | Cesco                 | 95RC80<br>95SMRC80                                                           | Rp, FM, ON                          | 2                          | HRA                       | OV/SO2/Cl           |
| 311                           | US Safety             | 150T46<br>150L46                                                             | Rp, FM, ON                          | 2                          | HRA                       | OV/SO2/Cl           |
| 312                           | Cesco                 | 96RC80                                                                       | Rp, FM, FF                          | 2                          | HRA                       | OV/SO2/Cl           |
| 313                           | US Safety             | 151T46                                                                       | Rp, FM, FF                          | 2                          | HRA                       | OV/SO2/Cl           |
| 318                           | USD                   | 2203-00<br>2103-00<br>2303-00                                                | Rp, FM, ON                          | 2                          |                           | OV/SO2/Cl           |
| 320                           | Pulmosan              | 10015<br>10189<br>10243<br>10276                                             | Rp, FM, ON                          | 1                          |                           | OV/SO2/Cl           |
| 324                           | Pulmosan              | 10030<br>10255<br>10204<br>10288                                             | Rp, FM, ON                          | 1                          | DM                        | OV/SO2/Cl           |
| 339                           | AO                    | R4052A<br>S4052A<br>R5052A<br>S5052A<br>R6052A<br>S6052A<br>R5552A<br>S5552A | Rp, Fm, ON                          | 2                          |                           | SO2/Cl              |
| 340                           | AO                    | R7052A<br>S7052A<br>R7752A<br>S7752A                                         | Rp, Fm, FF                          | 2                          |                           | SO2/Cl              |



## CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                         | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                            |                                     |                            |                           |                     |
| 341                | AO                    | R4052AD<br>R5052AD<br>R6052AD<br>S4052AD<br>S5052AD<br>S6052AD<br>R5552AD<br>S5552AD                       | Rp, Fm, ON                          | 2                          | DM                        | SO2/Cl              |
| 342                | AO                    | R7052AD<br>S7052AD<br>R7752AD<br>S7752AD                                                                   | Rp, Fm, FF                          | 2                          | DM                        | SO2/Cl              |
| 343                | AO                    | R4053A<br>S4053A<br>R5053A<br>S5053A<br>R6053A<br>S6053A<br>R5553A<br>S5553A                               | Rp, Fm, ON                          | 2                          |                           | OV/SO2/Cl<br>ClO2   |
| 344                | AO                    | R7053A<br>S7053A<br>R7753A<br>S7753A                                                                       | Rp, Bm, FF                          | 2                          |                           | OV/SO2/Cl<br>ClO2   |
| 345                | AO                    | R4053AD<br>S4053AD<br>R5053AD<br>S5053AD<br>R6053AD<br>S6053AD<br>R5553AD<br>S5553AD<br>R7753AD<br>S7753AD | Rp, Fm, ON                          | 2                          | DM                        | OV/SO2/Cl<br>ClO2   |
| 346                | AO                    | R7053AD<br>S7053AD                                                                                         | Rp, Fm, FF                          | 2                          | DM                        | OV/SO2/Cl<br>ClO2   |
| 352                | North                 | 10003S<br>10003M                                                                                           | Su, ON                              | 1                          |                           | OV/SO2/Cl           |



CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 353                           | North                 | 10002S<br>10002M                                                                                                     | Su, ON                              | 1                          |                           | SO2/Cl              |
| 356                           | North                 | 10012S<br>10012M                                                                                                     | Su, ON                              | 1                          | DM                        | SO2/Cl              |
| 357                           | North                 | 10013S<br>10013M                                                                                                     | Su, ON                              | 1                          | DM                        | OV/SO2/Cl           |
| 359                           | Cover                 | 1482-G102<br>1482-S-G102<br>1482-L-G102<br>1585S-G102<br>1585-G102<br>1585L-G102                                     | Rp, Fm, ON                          | 2                          |                           | SO2/Cl              |
| 368                           | Willson               | 3025<br>3025S<br>S3025<br>3025R<br>S3025R<br>3025SR<br>S3025S<br>3025SSS<br>S3025SS<br>S305SSS<br>3025SS<br>3025SR   | Rp, Bm, ON                          | 2                          |                           | OV/SO2/Cl           |
| 369                           | Willson               | 3125<br>3225                                                                                                         | Rp, Bm, FF                          | 2                          |                           | OV/SO2/Cl           |
| 370                           | Willson               | 3035<br>3035S<br>S3035<br>3035R<br>S3035S<br>3035SR<br>S3035R<br>S3035SR<br>S3035SS<br>S3035SSS<br>3035SS<br>3035SSS | Rp, Bm, ON                          | 2                          |                           | OV/SO2/Cl           |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                                              |                                     |                            |                           |                     |
| 371                | Willson               | 3135<br>3235                                                                                                                                 | Rp,Bm, FF                           | 2                          |                           | OV/SO2/Cl           |
| 380                | Willson               | 302510<br>302510R<br>302510S<br>302510SR<br>302510SS<br>302510SSS<br>S302510<br>S302510S<br>S302510R<br>S302510SR<br>S302510SS<br>S302510SSS | Rp,Bm, ON                           | 2                          | DM                        | OV/SO2/Cl           |
| 381                | Willson               | 312510<br>322510                                                                                                                             | Rp,Bm, FF                           | 2                          | DM                        | OV/SO2/Cl           |
| 386                | Willson               | 303512<br>303512R<br>303512S<br>303512SR<br>303512SS<br>303512SSS<br>S303512<br>S303512S<br>S303512R<br>S303512SR<br>S303512SS<br>S303512SSS | Rp,Bm, ON                           | 2                          | HA                        | OV/SO2/Cl           |
| 387                | Willson               | 313512<br>323512                                                                                                                             | Rp,Bm, FF                           | 2                          | HA                        | OV/SO2/Cl           |
| 393                | USD                   | 2133-00*<br>2233-00*<br>2333-00*                                                                                                             | Rp,Fm, ON                           | 2                          | DFMR                      | OV/SO2/Cl           |
| 394                | USD                   | 3233-00*                                                                                                                                     | Rp,Fm, FF                           | 2                          | DFMR                      | OV/SO2/Cl           |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor    |
|--------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|------------------------|
| TC-23C-            |                       |                                                                                      |                                     |                            |                           |                        |
| 395                | USD                   | 2192-00<br>2292-00<br>2392-00                                                        | Rp,Fm, ON                           | 2                          | HA                        | SO2/Cl                 |
| 396                | USD                   | 3292-00                                                                              | Rp,Fm, FF                           | 2                          | HA                        | SO2/Cl                 |
| 407                | Glendale              | GR7022                                                                               | Rp,Fm, FF                           | 2                          |                           | SO2/Cl                 |
| 408                | Glendale              | GR7022-10                                                                            | Rp,Fm, FF                           | 2                          | DM                        | SO2/Cl                 |
| 410                | Glendale              | GR7023                                                                               | Rp,Fm, FF                           | 2                          |                           | OV/SO2/Cl              |
| 411                | Glendale              | GR7023-10                                                                            | Rp,Fm, FF                           | 2                          | DM                        | OV/SO2/Cl              |
| 415                | AO                    | R4052HE<br>S4052HE<br>R5052HE<br>S5052HE<br>R6052HE<br>S6052HE<br>R5552HE<br>S5552HE | Rp,Fm, ON                           | 2                          | HRA                       | SO2/Cl                 |
| 416                | AO                    | R7052HE<br>S7052HE<br>R7752HE<br>S7752HE                                             | Rp,Fm, FF                           | 2                          | HRA                       | SO2/Cl                 |
| 417                | AO                    | R4053HE<br>S4053HE<br>R5053HE<br>S5053HE<br>R6053HE<br>S6053HE<br>R5553HE<br>S5553HE | Rp,Fm, ON                           | 2                          | HRA                       | SO2/Cl<br>ClO2<br>Pest |

## CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor       |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------------|
| 418                           | AO                    | R7053HE<br>S7053HE<br>R7753HE<br>S7753HE                                                                       | Rp,Fm, FF                           | 2                          | HRA                       | OV/SO2/Cl<br>ClO2<br>Pest |
| 421                           | Cover                 | 1482-G104-G208<br>1482-S-G104-G208<br>1482-L-G104-G208<br>1585S-G104-G208<br>1585-G104-G208<br>1585L-G104-G208 | Rp,Fm, ON                           | 2                          | HRA                       | OV/SO2/Cl                 |
| 429                           | USD                   | 3202-00                                                                                                        | Rp,Fm, FF                           | 2                          |                           | SO2/Cl                    |
| 430                           | USD                   | 2102-00<br>2202-00<br>2302-00                                                                                  | Rp,Fm, ON                           | 2                          |                           | SO2/Cl                    |
| 431                           | USD                   | 2112-00<br>2212-00<br>2312-00                                                                                  | Rp,Fm, ON                           | 2                          | DM                        | SO2/Cl                    |
| 432                           | USD                   | 3212-00                                                                                                        | Rp,Fm, FF                           | 2                          | DM                        | SO2/Cl                    |
| 433                           | USD                   | 2113-00<br>2213-00<br>2313-00                                                                                  | Rp,Fm, ON                           | 2                          | DM                        | OV/SO2/Cl<br>CH2-O        |
| 434                           | USD                   | 3213-00                                                                                                        | Rp,Fm, ON                           | 2                          | DM                        | OV/SO2/Cl<br>CH2-O        |
| 443                           | 3M                    | 7202                                                                                                           | Rp,Fm, ON                           | 2                          |                           | SO2/Cl                    |
| 444                           | 3M                    | 7208                                                                                                           | Rp,Fm, ON                           | 2                          | DMZ                       | SO2/Cl                    |
| 445                           | 3M                    | 7213                                                                                                           | Rp,Fm, ON                           | 2                          | HRA                       | SO2/Cl                    |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 446                           | 3M                    | 7203                                                                                                           | Rp, Fm, ON                          | 2                          |                           | OV/SO2/Cl           |
| 447                           | 3M                    | 7209                                                                                                           | Rp, Fm, ON                          | 2                          | DMZ                       | OV/SO2/Cl           |
| 448                           | 3M                    | 7214                                                                                                           | Rp, Fm, ON                          | 2                          | HRA                       | OV/SO2/Cl           |
| 449                           | North                 | 7912                                                                                                           | Es, M                               | 1                          | DM                        | SO2/Cl              |
| 450                           | USD                   | 2193-00<br>2293-00<br>2393-00                                                                                  | Rp, Fm, ON                          | 2                          | HA                        | OV/SO2/Cl           |
| 451                           | USD                   | 3293-00                                                                                                        | Rp, Fm, FF                          | 2                          | HA                        | OV/SO2/Cl           |
| 454                           | USD                   | 3203-00                                                                                                        | Rp, Fm, FF                          | 2                          |                           | OV/SO2/Cl<br>CH2-O  |
| 459                           | Cover                 | 1482-G102-G208<br>1482-S-G102-G208<br>1482-L-G102-G208<br>1585S-G102-G208<br>1585-G102-G208<br>1585L-G102-G208 | Rp, Fm, ON                          | 2                          | HRA                       | SO2/Cl              |
| 461                           | MSA                   | 472749                                                                                                         | Rp, Bm, ON                          | 2                          | DM                        | SO2/Cl<br>CH2-O     |
| 462                           | MSA                   | 472750                                                                                                         | Rp, Bm, ON                          | 2                          | DM                        | OV/SO2/Cl<br>CH2-O  |
| 466                           | MSA                   | 472756                                                                                                         | Rp, Bm, ON                          | 2                          | HA                        | OV/SO2/Cl<br>CH2-O  |
| 467                           | MSA                   | 472757                                                                                                         | Rp, Bm, ON                          | 2                          | DFMR                      | OV/SO2/Cl<br>CH2-O  |

## CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)         | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 470                           | MSA                   | 472760                     | Rp, Bm, ON                          | 2                          | HA                        | SO2/Cl<br>CH2-O     |
| 472                           | MSA                   | 472764                     | Rp, Bm, ON                          | 2                          | DM                        | OV/SO2/Cl<br>CH2-O  |
| 479                           | Racal                 | BE1/B                      | PAPR                                | 3                          |                           | Cl                  |
| 480                           | Racal                 | BE5/B                      | PAPR                                | 3                          |                           | Cl                  |
| 481                           | Racal                 | BE6/B                      | PAPR                                | 3                          |                           | Cl                  |
| 487                           | Sellstrom             | 315-G102-G208              | Rp, FM, ON                          | 2                          | HRA                       | SO2/Cl              |
| 492                           | Scott                 | 70-AG                      | ES, MP                              | 1                          |                           | Cl/H2S              |
| 496                           | Pulmosan              | 10411                      | Rp, FM, FF                          | 1                          |                           | SO2/Cl              |
| 497                           | Pulmosan              | 10414                      | Rp, FM, FF                          | 1                          |                           | OV/SO2/Cl           |
| 500                           | Pulmosan              | 10423                      | Rp, FM, FF                          | 1                          | DM                        | SO2/Cl              |
| 501                           | Pulmosan              | 10426                      | Rp, FM, FF                          | 1                          | DM                        | OV/SO2/Cl           |
| 511                           | MSA                   | 469728                     | Rp, FM, ON                          | 1                          | DM                        | OV/SO2/Cl<br>CH2-O  |
| 512                           | MSA                   | 469729                     | Rp, FM, ON                          | 1                          | DM                        | OV/SO2/Cl<br>CH2-O  |
| 514                           | MSA                   | 471914<br>476337<br>476338 | ES, MP                              | 1                          | DM                        | SO2/Cl/H2S          |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                    | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 516                           | Pirelli               | 4336.2023                                                             | Rp,FM, ON                           | 2                          |                           | SO2/Cl              |
| 517                           | Scott                 | 64-AG-H<br>64E-AG-H<br>64M-AG-H<br>64ME-AG-H<br>64S-AG-H<br>64SE-AG-H | Rp,FM, ON                           | 2                          | HRA                       | SO2/Cl<br>CH2-O     |
| 518                           | Scott                 | 65-AG-H<br>65S-AG-H                                                   | Rp,FM, FF                           | 2                          | HRA                       | SO2/Cl<br>CH2-O     |
| 521                           | Scott                 | 64-OA-H<br>64E-OA-H<br>64M-OA-H<br>64ME-OA-H<br>64S-OA-H<br>64SE-OA-H | Rp,FM, ON                           | 2                          | HRA                       | OV/SO2/Cl<br>CH2-O  |
| 522                           | Scott                 | 65-OA-H<br>65S-OA-H                                                   | Rp,FM, FF                           | 2                          | HRA                       | OV/SO2/Cl<br>CH2-O  |
| 527                           | Pirelli               | 4333.2033                                                             | Rp,FM, FF                           | 2                          |                           | SO2/Cl              |
| 532                           | USD                   | 2143-00<br>2243-00<br>2343-00                                         | Rp,FM, ON                           | 2                          | DFMR                      | OV/SO2/Cl<br>CH2-O  |
| 533                           | USD                   | 3243-00                                                               | Rp,FM, FF                           | 2                          | DFMR                      | OV/SO2/Cl<br>CH2-O  |
| 534                           | Racal                 | BE3/BC<br>BE7/BC                                                      | PAPR, FF                            | 3                          |                           | Cl                  |
| 536                           | Safety<br>Supply      | F-200-AG<br>F-160-AG<br>F-800-AG                                      | Rp,FM, ON                           | 2                          |                           | SO2/Cl              |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 537                           | Safety<br>Supply      | F-700-AG                                     | Rp,FM, FF                           | 2                          |                           | SO2/Cl              |
| 542                           | Safety<br>Supply      | F-200-OA<br>F-160-OA<br>F-800-OA             | Rp,FM, ON                           | 2                          |                           | OV/SO2/Cl           |
| 543                           | Safety<br>Supply      | F-700-OA                                     | Rp,FM, FF                           | 2                          |                           | OV/SO2/Cl           |
| 550                           | Safety<br>Supply      | F-160-AG-F-P<br>F-200-AG-F-P<br>F-800-AG-F-P | Rp,FM, ON                           | 2                          | DM                        | SO2/Cl              |
| 551                           | Safety<br>Supply      | F-700-AG-F-P                                 | Rp,FM, FF                           | 2                          | DM                        | SO2/Cl              |
| 552                           | Safety<br>Supply      | F-160-OA-F-P<br>F-200-OA-F-P<br>F-800-OA-F-P | Rp,FM, ON                           | 2                          | DM                        | SO2/Cl              |
| 553                           | Safety<br>Supply      | F-700-OA-F-P                                 | Rp,FM, FF                           | 2                          | DM                        | OV/SO2/Cl           |
| 563                           | Willson               | 1525<br>1525R<br>1525SS                      | Rp,FM, ON                           | 2                          |                           | OV/SO2/Cl           |
| 564                           | Willson               | 3525<br>3525R<br>3525SS                      | Rp,FM, ON                           | 2                          |                           | OV/SO2/Cl           |
| 565                           | Willson               | 1535<br>1535R<br>1535SS                      | Rp,FM, ON                           | 2                          |                           | OV/SO2/Cl           |



CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor    |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|------------------------|
| 566                           | Willson               | 3535<br>3535R<br>3535SS                                                        | Rp,FM, ON                           | 2                          |                           | OV/SO2/Cl              |
| 577                           | Willson               | 152510<br>152510R<br>152510SS                                                  | Rp,FM, ON                           | 2                          | DM                        | OV/SO2/Cl              |
| 578                           | Willson               | 352510<br>352510R<br>352510SS                                                  | Rp,FM, ON                           | 2                          | DM                        | OV/SO2/Cl              |
| 583                           | Willson               | 153512<br>153512R<br>153512SS                                                  | Rp,FM, ON                           | 2                          | HA                        | OV/SO2/Cl              |
| 584                           | Willson               | 353512<br>353512R<br>353512SS                                                  | Rp,FM, ON                           | 2                          | HA                        | OV/SO2/Cl              |
| 587                           | AO                    | R4563A<br>S4563A<br>R5563A<br>S5563A<br>R6563A<br>S6563A<br>R55563A<br>S55563A | Rp,FM, ON                           | 2                          | DFM                       | OV/SO2/Cl<br>ClO2/Pest |
| 588                           | AO                    | R7563A<br>S7563A<br>R77563A<br>S77563A                                         | Rp,FM, FF                           | 2                          | DFM                       | OV/SO2/Cl<br>ClO2/Pest |
| 593                           | Racal                 | BE1/E                                                                          | PAPR, HH                            | 3                          |                           | SO2/Cl                 |
| 594                           | Racal                 | BE3/EC<br>BE7/EC                                                               | PAPR, FF                            | 3                          |                           | SO2/Cl                 |
| 595                           | Racal                 | BE5/E                                                                          | PAPR, HH                            | 3                          |                           | SO2/Cl                 |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 596                           | Racal                 | BE6/E                                                | PAPR, HH                            | 3                          |                           | SO2/Cl              |
| 597                           | Racal                 | BE1/EP3                                              | PAPR, HH                            | 3                          | HRA                       | SO2/Cl              |
| 598                           | Racal                 | BE3/EP3<br>BE 7/EP3                                  | PAPR, FF                            | 3                          | HRA                       | SO2/Cl              |
| 599                           | Racal                 | BE 5/EP3                                             | PAPR, HH                            | 3                          | HRA                       | SO2/Cl              |
| 600                           | Racal                 | BE6/EP3                                              | PAPR, HH                            | 1                          | HRA                       | SO2/Cl              |
| 601                           | AO                    | R9722A                                               | ES, MP                              | 1                          |                           | SO2/Cl              |
| 603                           | Racal                 | BE17/P3                                              | PAPR, HH                            | 3                          | HRA                       | SO2/Cl              |
| 605                           | Racal                 | BE1/AE                                               | PAPR, HH                            | 3                          |                           | OV/SO2/Cl           |
| 606                           | Racal                 | BE3/AE<br>BE7/AE                                     | PAPR, FF                            | 3                          |                           | OV/SO2/Cl           |
| 607                           | Racal                 | BE5/AE                                               | PAPR, HH                            | 3                          |                           | OV/SO2/Cl           |
| 608                           | Racal                 | BE6/AE                                               | PAPR, HH                            | 3                          |                           | OV/SO2/Cl           |
| 613                           | Racal                 | BE8/E                                                | PAPR, ON                            | 3                          |                           | SO2/Cl              |
| 614                           | Racal                 | BE8/EP3                                              | PAPR, ON                            | 3                          | HRA                       | SO2/Cl              |
| 615                           | Racal                 | BE8/AE                                               | PAPR                                | 3                          |                           | OV/SO2/Cl           |
| 619                           | Glendale              | GR-1622-50<br>GR-2022-50<br>GR-4022-50<br>GR-8022-50 | Rp, FM, ON                          | 2                          | HRA                       | SO2/Cl              |

## CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 620                           | Glendale              | GR-7022-50                                           | Rp,FM, FF                           | 2                          | HRA                       | SO2/Cl              |
| 621                           | Glendale              | GR-2023-50<br>GR-8023-50<br>GR-1623-50<br>GR-4023-50 | Rp,FM, ON                           | 2                          | HRA                       | OV/SO2/Cl           |
| 622                           | Glendale              | GR-4023-50<br>GR-7023-50                             | Rp, Fm, FF                          | 2                          | HRA                       | OV/SO2/Cl           |
| 626                           | Neoterik              | NP1562-7                                             | PAPR, ON                            | 3                          |                           | OV/SO2/Cl           |
| 627                           | Neoterik              | NP1562-6                                             | PAPR, ON                            | 3                          |                           | SO2/Cl              |
| 631                           | Racal                 | BE4/B                                                | PAPR, HH                            | 3                          |                           | Cl                  |
| 634                           | Racal                 | BE4/E                                                | PAPR, HH                            | 3                          |                           | SO2/Cl              |
| 635                           | Racal                 | BE4/EP3                                              | PAPR, HH                            | 3                          | HRA                       | SO2/Cl              |
| 636                           | Racal                 | BE4/AE                                               | PAPR, HH                            | 3                          |                           | OV/SO2/Cl           |
| 638                           | Neoterik              | NP1664-7<br>NP1564-7                                 | PAPR, FF                            | 3                          |                           | OV/SO2/Cl           |
| 640                           | Neoterik              | NP1664-6<br>NP1564-6                                 | PAPR, FF                            | 3                          |                           | SO2/Cl              |
| 647                           | Racal                 | BE3/AEP3<br>BE7/AEP3                                 | PAPR, FF                            | 3                          | HRA                       | OV/SO2/Cl           |
| 648                           | Racal                 | BE8/AEP3                                             | PAPR, ON                            | 3                          | HRA                       | OV/SO2/Cl           |
| 652                           | North                 | 7592S,M,L<br>7792S,M,L                               | Rp,Fm, ON                           | 2                          | DFM                       | SO2/Cl<br>CH2-O     |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 653                           | North                 | 75BP92M<br>75BP92L                   | Rp,BM, ON                           | 2                          | DFM                       | SO2/Cl<br>CH2-O     |
| 654                           | North                 | 7692<br>7692S                        | Rp,Fm, FF                           | 2                          | DFM                       | SO2/Cl<br>CH2-O     |
| 655                           | North                 | 7593S/M/L<br>7793S/M/L               | Rp,Fm, ON                           | 2                          | DFM                       | OV/SO2/Cl           |
| 656                           | North                 | 75BP93M<br>75BP93L                   | Rp,Bm, ON                           | 2                          | DFM                       | OV/SO2/Cl           |
| 657                           | North                 | 7693<br>7693S                        | Rp,Fm, FF                           | 2                          | DFM                       | OV/SO2/Cl           |
| 664                           | Cover                 | 1694-G104                            | Rp,Fm, FF                           | 2                          |                           | OV/SO2/Cl           |
| 665                           | Cover                 | 1694-G104-F100                       | Rp,Fm, FF                           | 2                          | DMZ                       | OV/SO2/Cl           |
| 670                           | Cover                 | 1694-G104-G208                       | Rp,Fm, FF                           | 2                          | HRA                       | OV/SO2/Cl           |
| 671                           | Cover                 | 1694-G102                            | Rp,Fm, FF                           | 2                          |                           | SO2/Cl              |
| 673                           | Cover                 | 1694-G102-G208                       | Rp,Fm, FF                           | 2                          | HRA                       | SO2/Cl              |
| 678                           | Eastern               | 287                                  | Rp, Fm, ON                          | 2                          | HRA                       | OV/SO2/Cl           |
| 679                           | AO                    | R7070A<br>S7070A<br>R7770A<br>S7770A | Rp, Fm, FF                          | 2                          |                           | OV/SO2/Cl<br>ClO2   |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s) | Respirator<br>and Facepiece<br>Type                                                                                           | Number<br>of<br>Cartridges                                                             | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------|---------------------|
| 684                | 3M                    | 7802<br>7802C      | Rp, Fm, FF<br>(For 7802C Combination Type C, CF)<br>Air pressure<br><u>(psig)</u><br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br><u>(feet)</u><br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 |                           | SO2, Cl             |
| 685                | 3M                    | 7803<br>7803C      | Rp, Fm, FF<br>(For 7803C Combination Type C, CF)<br>Air pressure<br><u>(psig)</u><br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br><u>(feet)</u><br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 |                           | SO2, Cl<br>OV       |
| 689                | 3M                    | 7808<br>7808C      | Rp, Fm, FF<br>(For 7808C Combination Type C, CF)<br>Air pressure<br><u>(psig)</u><br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br><u>(feet)</u><br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | DMZ                       | SO2, Cl             |
| 690                | 3M                    | 7809<br>7809C      | Rp, Fm, FF<br>(For 7809C Combination Type C, CF)<br>Air pressure<br><u>(psig)</u><br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br><u>(feet)</u><br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | DMZ                       | SO2, Cl<br>OV       |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                         | Respirator<br>and Facepiece<br>Type                                                                                    | Number<br>of<br>Cartridges                                                      | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------|---------------------|
| 694                | 3M                    | 7813<br>7813C                              | Rp, Fm, FF<br>(For 7813C Combination Type C, CF)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | HRA                       | SO2, Cl             |
| 695                | 3M                    | 7814<br>7814C                              | Rp, Fm, FF<br>(For 7814C Combination Type C, CF)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | HRA                       | SO2, Cl<br>OV       |
| 699                | Willson               | 1226/R/S/SR/SS/SSS<br>S1226/R/S/SR/SS/SSS  | ON, Rp, Fm                                                                                                             | 2                                                                               |                           | SO2/Cl/<br>CH2-O    |
| 700                | Willson               | 1626, 1726                                 | FF, Rp, Fm                                                                                                             | 2                                                                               |                           | SO2/Cl/<br>CH2-O    |
| 701                | Willson               | 1526, 1526R<br>1526SS                      | ON, Rp, Fm                                                                                                             | 2                                                                               |                           | SO2/Cl<br>CH2-O     |
| 702                | Willson               | 3026S/R/S/SR/SS/SSS<br>S3026/R/S/SR/SS/SSS | ON, Rp, Bm                                                                                                             | 2                                                                               |                           | SO2/Cl<br>CH2-O     |
| 703                | Willson               | 3126, 3226                                 | FF, Bm, Rp                                                                                                             | 2                                                                               |                           | SO2/Cl<br>CH2-O     |
| 704                | Willson               | 3526, 3526R<br>3526SS                      | ON, Bm, Rp                                                                                                             | 2                                                                               |                           | SO2/Cl<br>CH2-O     |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 705                           | Willson               | 122610/R/S/SR/SS/SSS<br>S122610/R/S/SR/SS/SSS | ON, Rp, Fm                          | 2                          | DM                        | SO2/Cl<br>CH2-O     |
| 706                           | Willson               | 152610<br>152610R<br>152610SS                 | ON, Rp, Fm                          | 2                          | DM                        | SO2/Cl<br>CH2-O     |
| 707                           | Willson               | 162610<br>172610                              | FF, Rp, Fm                          | 2                          | DM                        | SO2/Cl<br>CH2-O     |
| 708                           | Willson               | 302610/R/S/SR/SS/SSS<br>S302610/R/S/SR/SS/SSS | ON, Rp, Bm                          | 2                          | DM                        | SO2/Cl<br>CH2-O     |
| 709                           | Willson               | 312610<br>322610                              | FF, Rp, Bm                          | 2                          | DM                        | SO2/Cl/<br>CH2-O    |
| 710                           | Willson               | 352610<br>352610R<br>352610SS                 | ON, Rp, Bm                          | 2                          | DM                        | SO2/Cl/<br>CH2-O    |
| 711                           | Willson               | 122617/R/S/SR/SS/SSS<br>S122617/R/S/SR/SS/SSS | ON, Rp, Fm                          | 2                          | DFM                       | SO2/Cl<br>CH2-O     |
| 712                           | Willson               | 162617<br>172617                              | FF, Rp, Fm                          | 2                          | DFM                       | SO2/Cl<br>CH2-O     |
| 713                           | Willson               | 152617<br>152617R<br>152617SS                 | FF, Rp, Fm                          | 2                          | DFM                       | SO2/Cl<br>CH2-O     |
| 714                           | Willson               | 302617/R/S/SR/SS/SSS<br>S302617/R/S/SR/SS/SSS | ON, Rp, Bm                          | 2                          | DFM                       | SO2/Cl<br>CH2-O     |
| 715                           | Willson               | 312617<br>322617                              | FF, Rp, Bm                          | 2                          | DFM                       | SO2/Cl/<br>CH2-O    |

CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                               |                                     |                            |                           |                     |
| 716                | Willson               | 352617<br>352617R<br>352617SS                 | ON, Rp, Bm                          | 2                          | DFM                       | SO2/Cl<br>CH2-O     |
| 717                | Willson               | 122517/R/S/SR/SS/SSS<br>S122517/R/S/SR/SS/SSS | ON, Rp, Fm                          | 2                          | DFM                       | SO2/Cl/OV           |
| 718                | Willson               | 162517<br>172517                              | FF, Rp, Fm                          | 2                          | DFM                       | SO2/Cl/OV           |
| 719                | Willson               | 152517<br>152517R<br>152517SS                 | ON, Rp, Fm                          | 2                          | DFM                       | SO2/Cl/OV           |
| 720                | Willson               | 302517/R/S/SR/SS/SSS<br>S302517/R/S/SR/SS/SSS | ON, Rp, Bm                          | 2                          | DFM                       | SO2/Cl/OV           |
| 721                | Willson               | 312517<br>322517                              | FF, Rp, Bm                          | 2                          | DFM                       | SO2/Cl/OV           |
| 722                | Willson               | 352517<br>352517R<br>352517SS                 | ON, Rp, Bm                          | 2                          | DFM                       | SO2/Cl/OV           |



## 5. Sulfur Dioxide

### Approval

Approved as respiratory protection against not more than 50 parts per million sulfur dioxide.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

E. Chemical Cartridges  
5. Sulfur Dioxide

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 41                            | MSA                   | 459434<br>461006                                                                                                     | Rp,Fm,Bm, ON                        | 2                          | DM                        | HCl/Cl/<br>CH2-O    |
| 47                            | MSA                   | 459435<br>461007                                                                                                     | Rp,Fm,Bm, ON                        | 2                          | DM                        | OV/HCl/Cl<br>CH2-O  |
| 60                            | AO                    | R4052*<br>R5052*<br>R6052*                                                                                           | Rp,Fm, ON                           | 2                          |                           | HCl/Cl              |
| 65                            | North                 | 7503*<br>7503M<br>7703M<br>7503S<br>7703S<br>7503L<br>7703L                                                          | Rp,Fm, ON                           | 2                          |                           | OV/HCl/Cl           |
| 66                            | North                 | 7513*<br>7513M<br>7713M<br>7513S<br>7713S<br>7513L<br>7713L                                                          | Rp,Fm, ON                           | 2                          | DM                        | OV/HCl/Cl           |
| 76                            | Willson               | 1225<br>S1225<br>1225S<br>S1225S<br>1225SR<br>S1225SR<br>S1225R<br>S1225SS<br>S1225SSS<br>1225SSS<br>1225R<br>1225SS | Rp,Fm, ON                           | 2                          |                           | OV/HCl/Cl           |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 77                            | Willson               | 122510<br>122510R<br>122510S<br>122510SR<br>122510SS<br>122510SSS<br>S122510<br>S122510R<br>S122510S<br>S122510SR<br>S122510SS<br>S122510SSS  | Rp,Fm, ON                           | 2                          | DM                        | OV/HCl/Cl           |
| 82                            | AO                    | R4053*<br>R5053*<br>R6053*                                                                                                                    | Rp,Fm, ON                           | 2                          |                           | OV/HCl/Cl           |
| 85                            | AO                    | R8153<br>S8153                                                                                                                                | Rp,Fm, ON                           | 1                          |                           | OV/HCl/Cl           |
| 104                           | North                 | 75BP03*<br>75BP03M<br>75BP03L                                                                                                                 | Rp,Bm, ON                           | 2                          |                           | OV/HCl/Cl           |
| 105                           | North                 | 75BP13*<br>75BP13M<br>75BP13L                                                                                                                 | Rp,Bm, ON                           | 2                          | DM                        | OV/HCl/Cl           |
| 111                           | AO                    | R9722                                                                                                                                         | Es, M                               | 1                          | DM                        | HCl/Cl              |
| 115                           | Scott                 | 6411-0001*<br>6413-0001*<br>6421-0001*<br>6423-0001*<br>6412-0001*<br>6422-0001*<br>64-AG<br>64E-AG<br>64M-AG<br>64ME-AG<br>64S-AG<br>64SE-AG | Rp,Fm, ON                           | 2                          |                           | HCl/Cl<br>CH2-O     |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                     | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 116                           | Scott                 | 6411-0101*<br>6413-0101*<br>6421-0101*<br>6423-0101*<br>6412-0101*<br>6422-0101*<br>64-AG-D<br>64E-AG-D<br>64M-AG-D<br>64ME-AG-D<br>64S-AG-D<br>64SE-AG-D<br>64032-01* | Rp, Fm, ON                          | 2                          | DMZ                       | HC1/C1<br>CH2-O     |
| 122                           | North                 | 7542*<br>7542M*                                                                                                                                                        | Rp, Fm, ON                          | 2                          | DMZ                       | HC1/C1              |
| 129                           | 3M                    | 8714<br>8720                                                                                                                                                           | Su, ON                              | 1                          | DM<br>8720 only           | HC1/C1              |
| 141                           | Willson               | 1625<br>1725                                                                                                                                                           | Rp, Fm, FF                          | 2                          |                           | OV/HC1/C1           |
| 142                           | Willson               | 162510<br>172510                                                                                                                                                       | Rp, Fm, FF                          | 2                          | DM                        | OV/HC1/C1           |
| 145                           | MSA                   | 461849                                                                                                                                                                 | Rp, Fm, FF                          | 2                          | DM                        | HC1/C1<br>CH2-O     |
| 146                           | MSA                   | 461850                                                                                                                                                                 | Rp, Fm, FF                          | 2                          | DM                        | OV/HC1/C1<br>CH2-O  |
| 150                           | MSA                   | 461854                                                                                                                                                                 | Rp, Fm, FF                          | 2                          | HA                        | HC1/C1<br>CH2-O     |
| 153                           | MSA                   | 461855                                                                                                                                                                 | Rp, Fm, FF                          | 2                          | HA                        | OV/HC1/C1<br>CH2-O  |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                 | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM                                                 | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------------------------------------------------------|---------------------|
| 154                           | MSA                   | 461856                                                                                                                                                                                             | Rp, Fm, FF                          | 2                          | DFMR                                                                      | OV/HCl/C1<br>CH2-O  |
| 156                           | MSA                   | 461835<br>462239                                                                                                                                                                                   | Rp, Fm, Bm, ON                      | 2                          | HA                                                                        | HCl/C1<br>CH2-O     |
| 159                           | MSA                   | 460847<br>461013                                                                                                                                                                                   | Rp, Fm, Bm, ON                      | 2                          | HA                                                                        | OV/HCl/C1<br>CH2-O  |
| 160                           | MSA                   | 460848<br>461014                                                                                                                                                                                   | Rp, Fm, Bm, ON                      | 2                          | DFMR                                                                      | OV/HCl/C1<br>CH2-O  |
| 163                           | Cover                 | 1482-G104<br>1482-S-G104<br>1482-L-G104<br>1482-G104-F100<br>1482-S-G104-F100<br>1482-L-G104-F100<br>1585S-G104<br>1585-G104<br>1585L-G104<br>1585S-G104-F100<br>1585-G104-F100<br>1585L-G104-F100 | Rp, Fm, ON                          | 2                          | DMZ<br><br>1482-G104-F100<br>1482-S-G104-F100<br>1482-L-G104-F100<br>only | OV/HCl/C1           |
| 163                           | Sellstrom             | 315-G104<br>315-G104-F100                                                                                                                                                                          | Rp, Fm, ON                          | 2                          | DMZ<br>315-G104-F100                                                      | OV/HCl/C1           |
| 163                           | Eastern               | E452                                                                                                                                                                                               | Rp, Fm, ON                          | 2                          | DMZ                                                                       | OV/HCl/C1           |
| 164                           | Cesco                 | 95RC55<br>95SMRC55                                                                                                                                                                                 | Fm, ON                              | 2                          |                                                                           | OV/HCl/C1           |
| 165                           | Cesco                 | 95RC75<br>95SMRC75                                                                                                                                                                                 | Rp, Fm, ON                          | 2                          | DM                                                                        | HCl/C1              |
| 166                           | Cesco                 | 95RC85<br>95SMRC85                                                                                                                                                                                 | Fm, ON                              | 2                          |                                                                           | OV/HCl/C1           |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                      | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 167                           | Cesco                 | 95RC105<br>95SMRC105                                                                                                                                                    | Rp,Fm, ON                           | 2                          | DM                        | OV/HCl/Cl           |
| 168                           | US Safety             | 150T21<br>150L21                                                                                                                                                        | Fm, ON                              | 2                          |                           | HCl/Cl              |
| 169                           | US Safety             | 150T25<br>150L25                                                                                                                                                        | Rp,Fm, ON                           | 2                          | DM                        | HCl/Cl              |
| 170                           | US Safety             | 150T26<br>150L26                                                                                                                                                        | Fm, ON                              | 2                          |                           | OV/HCl/Cl           |
| 171                           | US Safety             | 150T28<br>150L28                                                                                                                                                        | Rp,Fm, ON                           | 2                          | DM                        | OV/HCl/Cl           |
| 172                           | Scott                 | 6411-0015*<br>6412-0015*<br>6413-0015*<br>6421-0015*<br>6422-0015*<br>6423-0015*<br>64-OA<br>64E-OA<br>64M-OA<br>64ME-OA<br>64S-OA<br>64SE-OA                           | Fm, ON                              | 2                          |                           | OV/HCl/Cl<br>CH2-O  |
| 174                           | Scott                 | 6411-0115*<br>6412-0115*<br>6413-0115*<br>6421-0115*<br>6422-0115*<br>6423-0115*<br>64-OA-D<br>64E-OA-D<br>64M-OA-D<br>64ME-OA-D<br>64S-OA-D<br>64SE-OA-D<br>604032-15* | Fm, ON                              | 2                          | DMZ                       | OV/HCl/Cl<br>CH2-O  |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                          | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 179                           | North                 | 75BP42*<br>75BP42M*                                         | Rp,Bm, ON                           | 2                          | DMZ                       | HCl/Cl              |
| 181                           | North                 | 7603<br>7603S<br>7603N*<br>7603SN*                          | Rp,Fm, FF                           | 2                          |                           | OV/HCl/Cl           |
| 183                           | Glendale              | GR-1622<br>GR-2022<br>GR-4022<br>GR-8022                    | Rp,Fm, ON                           | 2                          |                           | HCl/Cl              |
| 184                           | Glendale              | GR-1622-10<br>GR-2022-10<br>GR-4022-10<br>GR-8022-10        | Rp,Fm, ON                           | 2                          | DM                        | HCl/Cl              |
| 186                           | North                 | 7613<br>7613S<br>7613N*<br>7613SN*                          | Rp,Fm, FF                           | 2                          | DM                        | OV/HCl/Cl           |
| 189                           | North                 | 7642*<br>7642S*<br>7642N*<br>7642SN*                        | Rp,Fm, FF                           | 2                          | DMZ                       | HCl/Cl              |
| 203                           | Pulmosan              | 10012<br>10186<br>10240<br>10273                            | Rp,Fm, ON                           | 1                          |                           | HCl/Cl              |
| 207                           | North                 | 7582M<br>7782M<br>7582S<br>7782S<br>7582L<br>7782L<br>7582* | Rp,Fm, ON                           | 2                          | HRA                       | HCl/Cl<br>CH2-O     |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                          | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 208                           | North                 | 75BP82*<br>75BP82M<br>75BP82L                               | Rp,Bm, ON                           | 2                          | HRA                       | HCl/Cl<br>CH2-O     |
| 209                           | North                 | 7682<br>7682S                                               | Rp,Fm, FF                           | 2                          | HRA                       | HCl/Cl<br>CH2-O     |
| 210                           | North                 | 7583M<br>7783M<br>7583S<br>7783S<br>7583L<br>7783L<br>7583* | Rp,Fm, ON                           | 2                          | HRA                       | OV/HCl/Cl           |
| 211                           | North                 | 75BP83*<br>75BP83M<br>75BP83L                               | Rp,Bm, ON                           | 2                          | HRA                       | OV/HCl/Cl           |
| 212                           | North                 | 7683S<br>7683                                               | Rp,Fm, FF                           | 2                          | HRA                       | OV/HCl/Cl           |
| 216                           | 3M                    | 8725<br>8726                                                | Su, ON                              | 1                          | DM<br>8726 only           | OV/HCl/Cl           |
| 218                           | Scott                 | 6470-0101*<br>6480-0101*<br>65-AG-D<br>65S-AG-D             | Rp,Fm, FF                           | 2                          | DMZ                       | HCl/Cl<br>CH2-O     |
| 221                           | Scott                 | 6470-0015*<br>6480-0015*<br>65-OA<br>65S-OA                 | Rp,Fm, FF                           | 2                          |                           | OV/HCl/Cl<br>CH2-O  |
| 222                           | Scott                 | 6470-0115*<br>6480-0115*<br>65-OA-D<br>65S-OA-D             | Rp,Fm, FF                           | 2                          | DMZ                       | OV/HCl/Cl<br>CH2-O  |



## CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                          | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                             |                                     |                            |                           |                     |
| 225                | Scott                 | 6470-0001<br>6480-0001<br>65-AG<br>65S-AG                   | Rp,Fm, FF                           | 2                          |                           | HCl/Cl<br>CH2-O     |
| 226                | North                 | 7502*<br>7502S<br>7702S<br>7502M<br>7702L<br>7502L<br>7702M | Rp,Fm, ON                           | 2                          |                           | HCl/Cl<br>CH2-O     |
| 227                | North                 | 75BP02*<br>75BP02M<br>75BP02L                               | Rp,Bm, ON                           | 2                          |                           | HCl/Cl<br>CH2-O     |
| 228                | North                 | 7602<br>7602S<br>7602N*<br>7602SN*                          | Rp,Fm, FF                           | 2                          |                           | HCl/Cl<br>CH2-O     |
| 229                | North                 | 7512*<br>7512S<br>7512M<br>7512L<br>7712S<br>7712M<br>7712L | Rp,Fm, ON                           | 2                          | DM                        | HCl/Cl<br>CH2-O     |
| 230                | North                 | 75BP12*<br>75BP12M<br>75BP12L                               | Rp,Bm, ON                           | 2                          | DM                        | HCl/Cl<br>CH2-O     |
| 231                | North                 | 7612<br>7612S<br>7612N*<br>7612SN*                          | Rp,Fm, FF                           | 2                          | DM                        | HCl/Cl<br>CH2-O     |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 232                           | Pulmosan              | 10027<br>10201<br>10252<br>10285                                                                                                                          | Rp,Fm, ON                           | 1                          | DM                        | HCl/Cl              |
| 233                           | AO                    | R7052*                                                                                                                                                    | Rp,Fm, FF                           | 2                          |                           | HCl/Cl              |
| 234                           | AO                    | R7053*                                                                                                                                                    | Rp,Fm, FF                           | 2                          |                           | OV/HCl/Cl           |
| 241                           | Glendale              | GR-1623<br>GR-2023<br>GR-4023<br>GR-8023                                                                                                                  | Rp,Fm, ON                           | 2                          |                           | OV/HCl/Cl           |
| 242                           | Glendale              | GR1623-10<br>GR2023-10<br>GR4023-10<br>GR8023-10                                                                                                          | Rp,Fm, ON                           | 2                          | DM                        | OV/HCl/Cl           |
| 246                           | Scott                 | 6411-0301*<br>64-AG-F<br>6413-0301*<br>64E-AG-F<br>6421-0301*<br>64M-AG-F<br>6423-0301*<br>64ME-AG-F<br>6412-0301*<br>64S-AG-F<br>6422-0301*<br>64SE-AG-F | Rp,Fm, ON                           | 2                          | DFMZR                     | HCl/Cl<br>CH2-O     |
| 247                           | Scott                 | 6470-0301*<br>6480-0301*<br>65-AG-F<br>65S-AG-F                                                                                                           | Rp,Fm, FF                           | 2                          | DFMZR                     | HCl/Cl<br>CH2-O     |

## CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 250                           | Scott                 | 6411-0315*<br>64-OA-F<br>6413-0315*<br>64M-OA-F<br>6421-0315*<br>64ME-OA-F<br>6423-0315*<br>64E-OA-F<br>6412-0315*<br>64S-OA-F<br>6422-0315*<br>64SE-OA-F | Rp,Fm, ON                           | 2                          | DFMZR                     | OV/HCl/Cl<br>CH2-O  |
| 251                           | Scott                 | 6470-0315*<br>6480-0315*<br>65-OA-F<br>65S-OA-F                                                                                                           | Rp,Fm, FF                           | 2                          | DFMZR                     | OV/HCl/Cl<br>CH2-O  |
| 260                           | MSA                   | 466903                                                                                                                                                    | Rp,Fm, ON                           | 2                          | DM                        | OV/HCl/Cl<br>CH2-O  |
| 261                           | MSA                   | 466902                                                                                                                                                    | Rp,Bm, ON                           | 2                          | DM                        | OV/HCl/Cl<br>CH2-O  |
| 262                           | MSA                   | 466904                                                                                                                                                    | Rp,Fm, FF                           | 2                          | DM                        | OV/HCl/Cl<br>CH2-O  |
| 265                           | Cesco                 | 96RC75                                                                                                                                                    | Rp,Fm, FF                           | 2                          | DM                        | HCl/Cl              |
| 266                           | US Safety             | 151T25                                                                                                                                                    | Rp,Fm, FF                           | 2                          | DM                        | HCl/Cl              |
| 267                           | Cesco                 | 96RC105                                                                                                                                                   | Rp,Fm, FF                           | 2                          | DM                        | OV/HCl/Cl           |
| 268                           | US Safety             | 151T28                                                                                                                                                    | Rp,Fm, FF                           | 2                          | DM                        | OV/HCl/Cl           |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                                              |                                     |                            |                           |                     |
| 281                | AO                    | R4563<br>S4563<br>R5563<br>S5563<br>R6563<br>S6563                                                                                           | Rp, Fm, ON                          | 2                          | DFM                       | OV/HCl/C1<br>Pest   |
| 282                | AO                    | R7563<br>S7563                                                                                                                               | Rp, Fm, FF                          | 2                          | DFM                       | OV/HCl/C1<br>Pest   |
| 288                | North                 | 7902                                                                                                                                         | Es, M                               | 1                          |                           | HCl/C1              |
| 298                | Willson               | 1235<br>1235S<br>S1235<br>1235SR<br>S1235R<br>S1235S<br>S1235SS<br>S1235SSS<br>1235SSS<br>1235R<br>1235SS<br>1235R                           | Rp, Fm, ON                          | 2                          |                           | OV/HCl/C1           |
| 299                | Willson               | 123512<br>S123512<br>123512S<br>S123512R<br>123512SR<br>S123512S<br>S123512SS<br>S123512SSS<br>123512SSS<br>123512R<br>123512SS<br>S123512SR | Rp, FM, ON                          | 2                          | HA                        | OV/HCl/C1           |
| 300                | Willson               | 1635<br>1735                                                                                                                                 | Rp, FM, FF                          | 2                          |                           | OV/HCl/C1           |

## CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)               | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 301                           | Willson               | 163512<br>173512                 | Rp, FM, FF                          | 2                          | HA                        | OV/HC1/C1           |
| 306                           | Cesco                 | 95RC50<br>95SMRC50               | Rp, FM, ON                          | 2                          | HRA                       | HC1/C1              |
| 307                           | US Safety             | 150T41<br>150L41                 | Rp, FM, ON                          | 2                          | HRA                       | HC1/C1              |
| 308                           | Cesco                 | 96RC50                           | Rp, FM, FF                          | 2                          | HRA                       | HC1/C1              |
| 309                           | US Safety             | 151T41                           | Rp, FM, FF                          | 2                          | HRA                       | HC1/C1              |
| 310                           | Cesco                 | 95RC80<br>95SMRC80               | Rp, FM, ON                          | 2                          | HRA                       | OV/HC1/C1           |
| 311                           | US Safety             | 150T46<br>150L46                 | Rp, FM, ON                          | 2                          | HRA                       | OV/HC1/C1           |
| 312                           | Cesco                 | 96RC80                           | Rp, FM, FF                          | 2                          | HRA                       | OV/HC1/C1           |
| 313                           | US Safety             | 151T46                           | Rp, FM, FF                          | 2                          | HRA                       | OV/HC1/C1           |
| 318                           | USD                   | 2203-00<br>2103-00<br>2303-00    | Rp, FM, ON                          | 2                          |                           | OV/HC1/C1<br>CH2-O  |
| 320                           | Pulmosan              | 10015<br>10189<br>10243<br>10276 | Rp, FM, ON                          | 1                          |                           | OV/HC1/C1           |
| 324                           | Pulmosan              | 10030<br>10255<br>10204<br>10288 | Rp, FM, ON                          | 1                          | DM                        | OV/HC1/C1           |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 339                           | AO                    | R4052A<br>S4052A<br>R5052A<br>S5052A<br>R6052A<br>S6052A<br>R5552A<br>S5552A         | Rp,Fm, ON                           | 2                          |                           | HCl/Cl              |
| 340                           | AO                    | R7052A<br>S7052A<br>R7752A<br>S7752A                                                 | Rp,Fm, FF                           | 2                          |                           | HCl/Cl              |
| 341                           | AO                    | R4052AD<br>R5052AD<br>R6052AD<br>S4052AD<br>S5052AD<br>S6052AD<br>R5552AD<br>S5552AD | Rp,Fm, ON                           | 2                          | DM                        | HCl/Cl              |
| 342                           | AO                    | R7052AD<br>S7052AD<br>R7752AD<br>S7752AD                                             | Rp,Fm, FF                           | 2                          | DM                        | HCl/Cl              |
| 343                           | AO                    | R4053A<br>S4053A<br>R5053A<br>S5053A<br>R6053A<br>S6053A<br>R5553A<br>S5553A         | Rp,Fm, ON                           | 2                          |                           | OV/HCl/Cl<br>ClO2   |
| 344                           | AO                    | R7053A<br>S7053A<br>R7753A<br>S7753A                                                 | Rp,Bm, FF                           | 2                          |                           | OV/HCl/Cl<br>ClO2   |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 345                           | AO                    | R4053AD<br>S4053AD<br>R5053AD<br>S5053AD<br>R6053AD<br>S6053AD<br>R5553AD<br>S5553AD | Rp, Fm, ON                          | 2                          | DM                        | OV/HCl/C1<br>ClO2   |
| 346                           | AO                    | R7053AD<br>S7053AD<br>R7753AD<br>S7753AD                                             | Rp, Fm, FF                          | 2                          | DM                        | OV/HCl/C1<br>ClO2   |
| 352                           | North                 | 10003S<br>10003M                                                                     | Su, ON                              | 1                          |                           | OV/HCl/C1           |
| 353                           | North                 | 10002S<br>10002M                                                                     | Su, ON                              | 1                          |                           | HCl/C1              |
| 356                           | North                 | 10012S<br>10012M                                                                     | Su, ON                              | 1                          | DM                        | HCl/C1              |
| 357                           | North                 | 10013S<br>10013M                                                                     | Su, ON                              | 1                          | DM                        | OV/HCl/C1           |
| 359                           | Cover                 | 1482-G102<br>1482-S-G102<br>1482-L-G102<br>1585S-G102<br>1585-G102<br>1585L-G102     | Rp, Fm, ON                          | 2                          |                           | HCl/C1              |

## CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 368                           | Willson               | 3025<br>3025S<br>S3025<br>3025R<br>S3025R<br>3025SR<br>S3025S<br>3025SSS<br>S3025SS<br>S305SSS<br>3025SS<br>3025SR                           | Rp, Bm, ON                          | 2                          |                           | OV/HCl/Cl           |
| 369                           | Willson               | 3125<br>3225                                                                                                                                 | Rp, Bm, FF                          | 2                          |                           | OV/HCl/Cl           |
| 370                           | Willson               | 3035<br>3035S<br>S3035<br>3035R<br>S3035S<br>3035SR<br>S3035R<br>S3035SR<br>S3035SS<br>S3035SSS<br>3035SS<br>3035SSS                         | Rp, Bm, ON                          | 2                          |                           | OV/HCl/Cl           |
| 371                           | Willson               | 3135<br>3235                                                                                                                                 | Rp, Bm, FF                          | 2                          |                           | OV/HCl/Cl           |
| 380                           | Willson               | 302510<br>S302510<br>302510R<br>S302510S<br>302510S<br>S302510R<br>302510SR<br>S302510SR<br>S302510SS<br>S302510SSS<br>302510SS<br>302510SSS | Rp, Bm, ON                          | 2                          | DM                        | OV/HCl/Cl           |



## CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 381                           | Willson               | 312510<br>322510                                                                                                                             | Rp,Bm, FF                           | 2                          | DM                        | OV/HC1/C1           |
| 386                           | Willson               | 303512<br>303512R<br>303512S<br>303512SR<br>303512SS<br>303512SSS<br>S303512<br>S303512S<br>S303512R<br>S303512SR<br>S303512SS<br>S303512SSS | Rp,Bm, ON                           | 2                          | HA                        | OV/HC1/C1           |
| 387                           | Willson               | 313512<br>323512                                                                                                                             | Rp,Bm, FF                           | 2                          | HA                        | OV/HC1/C1           |
| 393                           | USD                   | 2133-00*<br>2233-00*<br>2333-00*                                                                                                             | Rp,Fm, ON                           | 2                          | DFMR                      | OV/HC1/C1           |
| 394                           | USD                   | 3233-00*                                                                                                                                     | Rp,Fm, FF                           | 2                          | DFMR                      | OV/HC1/C1           |
| 395                           | USD                   | 2192-00<br>2292-00<br>2392-00                                                                                                                | Rp,Fm, ON                           | 2                          | HA                        | HC1/C1              |
| 396                           | USD                   | 3292-00                                                                                                                                      | Rp,Fm, FF                           | 2                          | HA                        | HC1/C1              |
| 407                           | Glendale              | GR7022                                                                                                                                       | Rp,Fm, FF                           | 2                          |                           | HC1/C1              |
| 408                           | Glendale              | GR7022-10                                                                                                                                    | Rp,Fm, FF                           | 2                          | DM                        | HC1/C1              |
| 410                           | Glendale              | GR7023                                                                                                                                       | Rp,Fm, FF                           | 2                          |                           | OV/HC1/C1           |
| 411                           | Glendale              | GR7023-10                                                                                                                                    | Rp,Fm, FF                           | 2                          | DM                        | OV/HC1/C1           |

## CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor    |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|------------------------|
| 415                           | AO                    | R4052HE<br>S4052HE<br>R5052HE<br>S5052HE<br>R6052HE<br>S6052HE<br>R5552HE<br>S5552HE                           | Rp,Fm, ON                           | 2                          | HRA                       | HCl/Cl                 |
| 416                           | AO                    | R7052HE<br>S7052HE<br>R7752HE<br>S7752HE                                                                       | Rp,Fm, FF                           | 2                          | HRA                       | HCl/Cl                 |
| 417                           | AO                    | R4053HE<br>S4053HE<br>R5053HE<br>S5053HE<br>R6053HE<br>S6053HE<br>R5553HE<br>S5553HE                           | Rp,Fm, ON                           | 2                          | HRA                       | OV/HCl/Cl<br>ClO2/Pest |
| 418                           | AO                    | R7053HE<br>S7053HE<br>R7753HE<br>S7753HE                                                                       | Rp,Fm, FF                           | 2                          | HRA                       | OV/HCl/Cl<br>ClO2/Pest |
| 421                           | Cover                 | 1482-G104-G208<br>1482-S-G104-G208<br>1482-L-G104-G208<br>1585S-G104-G208<br>1585-G104-G208<br>1585L-G104-G208 | Rp,Fm, ON                           | 2                          | HRA                       | OV/HCl/Cl              |
| 429                           | USD                   | 3202-00                                                                                                        | Rp,Fm, FF                           | 2                          |                           | HCl/Cl                 |
| 430                           | USD                   | 2102-00<br>2202-00<br>2302-00                                                                                  | Rp,Fm, ON                           | 2                          |                           | HCl/Cl                 |

## CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 431                           | USD                   | 2112-00<br>2212-00<br>2312-00 | Rp,Fm, ON                           | 2                          | DM                        | HCl/Cl              |
| 432                           | USD                   | 3212-00                       | Rp,Fm, FF                           | 2                          | DM                        | HCl/Cl              |
| 433                           | USD                   | 2113-00<br>2213-00<br>2313-00 | Rp,Fm, ON                           | 2                          | DM                        | OV/HCl/Cl<br>CH2-O  |
| 434                           | USD                   | 3213-00                       | Rp,Fm, ON                           | 2                          | DM                        | OV/HCl/Cl<br>CH2-O  |
| 443                           | 3M                    | 7202                          | Rp,Fm, ON                           | 2                          |                           | HCl/Cl              |
| 444                           | 3M                    | 7208                          | Rp,Fm, ON                           | 2                          | DMZ                       | HCl/Cl              |
| 445                           | 3M                    | 7213                          | Rp,Fm, ON                           | 2                          | HRA                       | HCl/Cl              |
| 446                           | 3M                    | 7203                          | Rp,Fm, ON                           | 2                          |                           | OV/HCl/Cl           |
| 447                           | 3M                    | 7209                          | Rp,Fm, ON                           | 2                          | DMZ                       | OV/HCl/Cl           |
| 448                           | 3M                    | 7214                          | Rp,Fm, ON                           | 2                          | HRA                       | OV/HCl/Cl           |
| 449                           | North                 | 7912                          | Es, M                               | 1                          | DM                        | HCl/Cl              |
| 450                           | USD                   | 2193-00<br>2293-00<br>2393-00 | Rp,Fm, ON                           | 2                          | HA                        | OV/HCl/Cl           |
| 451                           | USD                   | 3293-00                       | Rp,Fm, FF                           | 2                          | HA                        | OV/HCl/Cl           |
| 454                           | USD                   | 3203-00                       | Rp,Fm, FF                           | 2                          |                           | OV/HCl/Cl<br>CH2-O  |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 459                           | Cover                 | 1482-G102-G208<br>1482-S-G102-G208<br>1482-L-G102-G208<br>1585S-G102-G208<br>1585-G102-G208<br>1585L-G102-G208 | Rp, Fm, ON                          | 2                          | HRA                       | HCl/C1              |
| 461                           | MSA                   | 472749                                                                                                         | Rp, Bm, ON                          | 2                          | DM                        | HCl/C1<br>CH2-O     |
| 462                           | MSA                   | 472750                                                                                                         | Rp, Bm, ON                          | 2                          | DM                        | OV/HCl/C1<br>CH2-O  |
| 466                           | MSA                   | 472756                                                                                                         | Rp, Bm, ON                          | 2                          | HA                        | OV/HCl/C1<br>CH2-O  |
| 467                           | MSA                   | 472757                                                                                                         | Rp, Bm, ON                          | 2                          | DFMR                      | OV/HCl/C1<br>CH2-O  |
| 470                           | MSA                   | 472760                                                                                                         | Rp, Bm, ON                          | 2                          | HA                        | HCl/C1<br>CH2-O     |
| 472                           | MSA                   | 472764                                                                                                         | Rp, Bm, ON                          | 2                          | DM                        | OV/HCl/C1<br>CH2-O  |
| 487                           | Sellstrom             | 315-G102-G208                                                                                                  | Rp, FM, ON                          | 2                          | HRA                       | HCl/C1              |
| 496                           | Pulmosan              | 10411                                                                                                          | Rp, FM, FF                          | 1                          |                           | HCl/C1              |
| 497                           | Pulmosan              | 10414                                                                                                          | Rp, FM, FF                          | 1                          |                           | OV/HCl/C1           |
| 500                           | Pulmosan              | 10423                                                                                                          | Rp, FM, FF                          | 1                          | DM                        | HCl/C1              |
| 501                           | Pulmosan              | 10426                                                                                                          | Rp, FM, FF                          | 1                          | DM                        | OV/HCl/C1           |

## CHEMICAL CARTRIDGES -- SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                    | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor             |
|-------------------------------|-----------------------|-----------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------------------|
| 511                           | MSA                   | 469728                                                                | Rp,FM, ON                           | 1                          | DM                        | OV/HCl/Cl<br>CH <sub>2</sub> -O |
| 512                           | MSA                   | 469729                                                                | Rp,FM, ON                           | 1                          | DM                        | OV/HCl/Cl<br>CH <sub>2</sub> -O |
| 514                           | MSA                   | 471914<br>476337<br>476338                                            | ES, MP                              | 1                          | DM                        | HCl/Cl<br>H <sub>2</sub> S      |
| 516                           | Pirelli               | 4336.2023                                                             | Rp,FM, ON                           | 2                          |                           | HCl/Cl                          |
| 517                           | Scott                 | 64-AG-H<br>64E-AG-H<br>64M-AG-H<br>64ME-AG-H<br>64S-AG-H<br>64SE-AG-H | Rp,FM, ON                           | 2                          | HRA                       | HCl/Cl<br>CH <sub>2</sub> -O    |
| 518                           | Scott                 | 65-AG-H<br>65S-AG-H                                                   | Rp,FM, FF                           | 2                          | HRA                       | HCl/Cl<br>CH <sub>2</sub> -O    |
| 521                           | Scott                 | 64-OA-H<br>64E-OA-H<br>64M-OA-H<br>64ME-OA-H<br>64S-OA-H<br>64SE-OA-H | Rp,FM, ON                           | 2                          | HRA                       | OV/HCl/Cl<br>CH <sub>2</sub> -O |
| 522                           | Scott                 | 65-OA-H<br>65S-OA-H                                                   | Rp,FM, FF                           | 2                          | HRA                       | OV/HCl/Cl<br>CH <sub>2</sub> -O |
| 527                           | Pirelli               | 4333.2033                                                             | Rp,FM, FF                           | 2                          |                           | HCl/Cl                          |
| 532                           | USD                   | 2143-00<br>2243-00<br>2343-00                                         | Rp,FM, ON                           | 2                          | DFMR                      | OV/HCl/Cl<br>CH <sub>2</sub> -O |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 533                           | USD                   | 3243-00                                      | Rp,FM, FF                           | 2                          | DFMR                      | OV/HC1/C1<br>CH2-O  |
| 536                           | Safety<br>Supply      | F-200-AG<br>F-160-AG<br>F-800-AG             | Rp,FM, ON                           | 2                          |                           | HC1/C1              |
| 537                           | Safety<br>Supply      | F-700-AG                                     | Rp,FM, FF                           | 2                          |                           | HC1/C1              |
| 542                           | Safety<br>Supply      | F-200-OA<br>F-160-OA<br>F-800-OA             | Rp,FM, ON                           | 2                          |                           | OV/HC1/C1           |
| 543                           | Safety<br>Supply      | F-700-OA                                     | Rp,FM, FF                           | 2                          |                           | OV/HC1/C1           |
| 550                           | Safety<br>Supply      | F-160-AG-F-P<br>F-200-AG-F-P<br>F-800-AG-F-P | Rp,FM, ON                           | 2                          | DM                        | HC1/C1              |
| 551                           | Safety<br>Supply      | F-700-AG-F-P                                 | Rp,FM, FF                           | 2                          | DM                        | HC1/C1              |
| 552                           | Safety<br>Supply      | F-160-OA-F-P<br>F-200-OA-F-P<br>F-800-OA-F-P | Rp,FM, ON                           | 2                          | DM                        | HC1/C1              |
| 553                           | Safety<br>Supply      | F-700-OA-F-P                                 | Rp,FM, FF                           | 2                          | DM                        | OV/HC1/C1           |
| 563                           | Willson               | 1525<br>1525R<br>1525SS                      | Rp,FM, ON                           | 2                          |                           | OV/HC1/C1           |
| 564                           | Willson               | 3525<br>3525R<br>3525SS                      | Rp,FM, ON                           | 2                          |                           | OV/HC1/C1           |

## CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor    |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|------------------------|
| 565                           | Willson               | 1535<br>1535R<br>1535SS                                                        | Rp,FM, ON                           | 2                          |                           | OV/HCl/Cl              |
| 566                           | Willson               | 3535<br>3535R<br>3535SS                                                        | Rp,FM, ON                           | 2                          |                           | OV/HCl/Cl              |
| 577                           | Willson               | 152510<br>152510R<br>152510SS                                                  | Rp,FM, ON                           | 2                          | DM                        | OV/HCl/Cl              |
| 578                           | Willson               | 352510<br>352510R<br>352510SS                                                  | Rp,FM, ON                           | 2                          | DM                        | OV/HCl/Cl              |
| 583                           | Willson               | 153512<br>153512R<br>153512SS                                                  | Rp,FM, ON                           | 2                          | HA                        | OV/HCl/Cl              |
| 584                           | Willson               | 353512<br>353512R<br>353512SS                                                  | Rp,FM, ON                           | 2                          | HA                        | OV/HCl/Cl              |
| 587                           | AO                    | R4563A<br>S4563A<br>R5563A<br>S5563A<br>R6563A<br>S6563A<br>R55563A<br>S55563A | Rp,FM, ON                           | 2                          | DFM                       | OV/HCl/Cl<br>ClO2/Pest |
| 588                           | AO                    | R7563A<br>S7563A<br>R77563A<br>S77563A                                         | Rp,FM, FF                           | 2                          | DFM                       | OV/HCl/Cl<br>ClO2/Pest |
| 593                           | Racal                 | BE1/E                                                                          | PAPR, HH                            | 3                          |                           | HCl/Cl                 |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s) | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 594                           | Racal                 | BE3/EC<br>BE7/EC   | PAPR, FF                            | 3                          |                           | HCl/Cl              |
| 595                           | Racal                 | BE5/E              | PAPR, HH                            | 3                          |                           | HCl/Cl              |
| 596                           | Racal                 | BE6/E              | PAPR, HH                            | 3                          |                           | HCl/Cl              |
| 597                           | Racal                 | BE1/EP3            | PAPR, HH                            | 3                          | HRA                       | HCl/Cl              |
| 598                           | Racal                 | BE3/EP3<br>BE7/EP3 | PAPR, FF                            | 3                          | HRA                       | HCl/Cl              |
| 599                           | Racal                 | BE5/EP3            | PAPR, HH                            | 3                          | HRA                       | HCl/Cl              |
| 600                           | Racal                 | BE6/EP3            | PAPR, HH                            | 1                          | HRA                       | HCl/Cl              |
| 601                           | AO                    | R9722A             | ES, MP                              | 1                          |                           | HCl/Cl              |
| 603                           | Racal                 | BE17/P3            | PAPR, HH                            | 3                          | HRA                       | HCl/Cl              |
| 605                           | Racal                 | BE1/AE             | PAPR, HH                            | 3                          |                           | OV/HCl/Cl           |
| 606                           | Racal                 | BE3/AE<br>BE7/AE   | PAPR, FF                            | 3                          |                           | OV/HCl/Cl           |
| 607                           | Racal                 | BE5/AE             | PAPR, HH                            | 3                          |                           | OV/HCl/Cl           |
| 608                           | Racal                 | BE6/AE             | PAPR, HH                            | 3                          |                           | OV/HCl/Cl           |
| 613                           | Racal                 | BE8/E              | PAPR, ON                            | 3                          |                           | HCl/Cl              |
| 614                           | Racal                 | BE8/EP3            | PAPR, ON                            | 3                          | HRA                       | HCl/Cl              |
| 615                           | Racal                 | BE8/AE             | PAPR, ON                            | 3                          |                           | OV/HCl/Cl           |



CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 619                           | Glendale              | GR-1622-50<br>GR-2022-50<br>GR-4022-50<br>GR-8022-50 | Rp, FM, ON                          | 2                          | HRA                       | Cl/HCl              |
| 620                           | Glendale              | GR-7022-50                                           | Rp, FM, FF                          | 2                          | HRA                       | HCl/Cl              |
| 621                           | Glendale              | GR-2023-50<br>GR-8023-50<br>GR-1623-50<br>GR-4023-50 | Rp, FM, ON                          | 2                          | HRA                       | OV/HCl/Cl           |
| 622                           | Glendale              | GR-4023-50<br>GR-7023-50                             | Rp, Fm, FF                          | 2                          | HRA                       | OV/HCl/Cl           |
| 626                           | Neoterik              | NP1562-7                                             | PAPR, ON                            | 3                          |                           | OV/HCl/Cl           |
| 627                           | Neoterik              | NP1562-6                                             | PAPR, ON                            | 3                          |                           | HCl/Cl              |
| 634                           | Racal                 | BE4/E                                                | PAPR, HH                            | 3                          |                           | HCl/Cl              |
| 635                           | Racal                 | BE4/EP3                                              | PAPR, HH                            | 3                          | HRA                       | HCl/Cl              |
| 636                           | Racal                 | BE4/AE                                               | PAPR, HH                            | 3                          |                           | OV/HCl/Cl           |
| 638                           | Neoterik              | NP1664-7<br>NP1564-7                                 | PAPR, FF                            | 3                          |                           | OV/HCl/Cl           |
| 640                           | Neoterik              | NP1664-6<br>NP1564-6                                 | PAPR, FF                            | 3                          |                           | HCl/Cl              |
| 647                           | Racal                 | BE3/AEP3<br>BE7/AEP3                                 | PAPR, FF                            | 3                          | HRA                       | OV/HCl/Cl           |
| 648                           | Racal                 | BE8/AEP3                                             | PAPR, ON                            | 3                          | HRA                       | OV/HCl/Cl           |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 652                           | North                 | 7592S/M/L<br>7792S/M/L               | Rp,Fm, ON                           | 2                          | DFM                       | HC1/C1<br>CH2-O     |
| 653                           | North                 | 75BP92M<br>75BP92L                   | Rp,BM, ON                           | 2                          | DFM                       | HC1/C1<br>CH2-O     |
| 654                           | North                 | 7692<br>7692S                        | Rp,Fm, FF                           | 2                          | DFM                       | HC1/C1<br>CH2-O     |
| 655                           | North                 | 7593S/M/L<br>7793S/M/L               | Rp,Fm, ON                           | 2                          | DFM                       | OV/HC1/C1           |
| 656                           | North                 | 75BP93M<br>75BP93L                   | Rp,Bm, ON                           | 2                          | DFM                       | OV/HC1/C1           |
| 657                           | North                 | 7693<br>7693S                        | Rp,Fm, FF                           | 2                          | DFM                       | OV/HC1/C1           |
| 664                           | Cover                 | 1694-G104                            | Rp,Fm, FF                           | 2                          |                           | OV/HC1/C1           |
| 665                           | Cover                 | 1694-G104-F100                       | Rp,Fm, FF                           | 2                          | DMZ                       | OV/HC1/C1           |
| 670                           | Cover                 | 1694-G104-G208                       | Rp,Fm, FF                           | 2                          | HRA                       | OV/HC1/C1           |
| 671                           | Cover                 | 1694-G102                            | Rp,Fm, FF                           | 2                          |                           | HC1/C1              |
| 673                           | Cover                 | 1694-G102-G208                       | Rp,Fm, FF                           | 2                          | HRA                       | HC1/C1              |
| 678                           | Eastern               | 287                                  | Rp, Fm, ON                          | 2                          | HRA                       | OV/HC1/C1           |
| 679                           | AO                    | R7070A<br>S7070A<br>R7770A<br>S7770A | Rp, Fm, FF                          | 2                          |                           | OV/HC1/C1<br>C102   |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                         | Respirator<br>and Facepiece<br>Type                                                                                    | Number<br>of<br>Cartridges                                                      | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                            |                                                                                                                        |                                                                                 |                           |                     |
| 684                | 3M                    | 7802<br>7802C                              | Rp, Fm, FF<br>(For 7802C Combination Type C, CF)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 |                           | Cl/HCl              |
| 685                | 3M                    | 7803<br>7803C                              | Rp, Fm, FF<br>(For 7803C Combination Type C, CF)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 |                           | Cl/HCl/<br>OV       |
| 689                | 3M                    | 7808<br>7808C                              | Rp, Fm, FF<br>(For 7808C Combination Type C, CF)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | DMZ                       | Cl/HCl              |
| 690                | 3M                    | 7809<br>7809C                              | Rp, Fm, FF<br>(For 7809C Combination Type C, CF)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | DMZ                       | Cl/HCl/<br>OV       |
| 699                | Willson               | 1226S/R/S/SR/SS/SSS<br>S1226/R/S/SR/SS/SSS | ON, Rp, Fm                                                                                                             | 2                                                                               |                           | Cl/HCl/<br>CH2-O    |

CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 700                           | Willson               | 1626, 1726                                    | FF, Rp, Fm                          | 2                          |                           | Cl/HCl/<br>CH2-O    |
| 701                           | Willson               | 1526, 1526R<br>1526SS                         | ON, Rp, Fm                          | 2                          |                           | Cl/HCl<br>CH2-O     |
| 702                           | Willson               | 3026S/R/S/SR/SS/SSS<br>S3026/R/S/SR/SS/SSS    | ON, Rp, Bm                          | 2                          |                           | Cl/HCl<br>CH2-O     |
| 703                           | Willson               | 3126, 3226                                    | FF, Bm, Rp                          | 2                          |                           | Cl/HCl<br>CH2-O     |
| 704                           | Willson               | 3526, 3526R<br>3526SS                         | ON, Bm, Rp                          | 2                          |                           | Cl/HCl<br>CH2-O     |
| 705                           | Willson               | 122610/R/S/SR/SS/SSS<br>S122610/R/S/SR/SS/SSS | ON, Rp, Fm                          | 2                          | DM                        | Cl/HCl<br>CH2-O     |
| 706                           | Willson               | 152610<br>152610R<br>152610SS                 | ON, Rp, Fm                          | 2                          | DM                        | Cl/HCl<br>CH2-O     |
| 707                           | Willson               | 162610<br>172610                              | FF, Rp, Fm                          | 2                          | DM                        | Cl/HCl<br>CH2-O     |
| 708                           | Willson               | 302610/R/S/SR/SS/SSS<br>S302610/R/S/SR/SS/SSS | ON, Rp, Bm                          | 2                          | DM                        | Cl/HCl<br>CH2-O     |
| 709                           | Willson               | 312610<br>322610                              | FF, Rp, Bm                          | 2                          | DM                        | Cl/HCl/<br>CH2-O    |
| 710                           | Willson               | 352610<br>352610R<br>352610SS                 | ON, Rp, Bm                          | 2                          | DM                        | Cl/HCl/<br>CH2-O    |

## CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 711                           | Willson               | 122617/R/S/SR/SS/SSS<br>S122617/R/S/SR/SS/SSS | ON, Rp, Fm                          | 2                          | DFM                       | C1/HCl<br>CH2-O     |
| 712                           | Willson               | 162617<br>172617                              | FF, Rp, Fm                          | 2                          | DFM                       | C1/HCl<br>CH2-O     |
| 713                           | Willson               | 152617<br>152617R<br>152617SS                 | FF, Rp, Fm                          | 2                          | DFM                       | C1/HCl<br>CH2-O     |
| 714                           | Willson               | 302617/R/S/SR/SS/SSS<br>S302617/R/S/SR/SS/SSS | ON, Rp, Bm                          | 2                          | DFM                       | C1/HCl<br>CH2-O     |
| 715                           | Willson               | 312617<br>322617                              | FF, Rp, Bm                          | 2                          | DFM                       | C1/HCl/<br>CH2-O    |
| 716                           | Willson               | 352617<br>352617R<br>352617SS                 | ON, Rp, Bm                          | 2                          | DFM                       | C1/HCl<br>CH2-O     |
| 717                           | Willson               | 122517/R/S/SR/SS/SSS<br>S122517/R/S/SR/SS/SSS | ON, Rp, Fm                          | 2                          | DFM                       | C1/HCl/OV           |
| 718                           | Willson               | 162517<br>172517                              | FF, Rp, Fm                          | 2                          | DFM                       | C1/HCl/OV           |
| 719                           | Willson               | 152517<br>152517R<br>152517SS                 | ON, Rp, Fm                          | 2                          | DFM                       | C1/HCl/OV           |
| 720                           | Willson               | 302517/R/S/SR/SS/SSS<br>S302517/R/S/SR/SS/SSS | ON, Rp, Bm                          | 2                          | DFM                       | C1/HCl/OV           |
| 721                           | Willson               | 312517<br>322517                              | FF, Rp, Bm                          | 2                          | DFM                       | C1/HCl/OV           |

## CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                               |                                     |                            |                           |                     |
| 722                | Willson               | 352517<br>352517R<br>352517SS | ON, Rp, Bm                          | 2                          | DFM                       | Cl/HCl/OV           |

## 6. Organic Vapor

### Approval

Approved as respiratory protection against not more than 1000 parts per million organic vapors by volume.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

Do not wear for protection against organic vapors with poor warning properties or those that generate high heats of reaction.

Maximum use concentrations will be lower than 1000 parts per million organic vapors where that concentration produces atmospheres immediately dangerous to life or health.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

E. Chemical Cartridges  
6. Organic Vapor

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                                              |                                     |                            |                           |                     |
| 40                 | MSA                   | 459433<br>461005<br>460852                                                                                                                   | Rp, Fm, Bm, ON                      | 2                          | DM                        |                     |
| 49                 | North                 | 7501*<br>7501S<br>7501M<br>7501L<br>7701S<br>7701M<br>7701L                                                                                  | Rp, Fm, ON                          | 2                          |                           |                     |
| 50                 | Willson               | 1221<br>1221<br>1221R<br>1221S<br>1221SR<br>1221SS<br>1221SSS<br>S1221<br>S1221R<br>S1221S<br>S1221SR<br>S1221SS<br>S1221SSS                 | Rp, Fm, ON                          | 2                          |                           |                     |
| 51                 | Willson               | 122110<br>122110R<br>122110S<br>122110SR<br>122110SS<br>122110SSS<br>S122110<br>S122110R<br>S122110SSS<br>S122110SS<br>S122110S<br>S122110SR | Rp, Fm, ON                          | 2                          | DM                        |                     |



## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                                              |                                     |                            |                           |                     |
| 52                 | Willson               | 122113<br>122113R<br>122113S<br>122113SR<br>122113SS<br>122113SSS<br>S122113<br>S12213R<br>S122113S<br>S122113SR<br>S122113SS<br>S122113SSS  | Rp,Fm, ON                           | 2                          | DFM                       |                     |
| 54                 | Willson               | 122115<br>122115R<br>122115S<br>122115SR<br>122115SS<br>122115SSS<br>S122115<br>S122115R<br>S122115S<br>S122115SR<br>S122115SS<br>S122115SSS | Rp,Fm, ON                           | 2                          | DM                        | PLE/Pest            |
| 56                 | AO                    | R4051*<br>R5051*<br>R6051*                                                                                                                   | Rp,Fm, ON                           | 2                          |                           |                     |
| 59                 | DeVilbiss             | MSE-502*<br>MSE-502-1*                                                                                                                       | Rp,Fm, ON                           | 2                          |                           |                     |
| 65                 | North                 | 7503*<br>7503S<br>7503M<br>7503L<br>7703S<br>7703M<br>7703L                                                                                  | Rp,Fm, ON                           | 2                          |                           | SO2/HCl<br>C1       |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 66                            | North                 | 7513*<br>7513S<br>7513M<br>7513L<br>7713S<br>7713M<br>7713L                                                          | Rp, Fm, ON                          | 2                          | DM                        | SO2/HCl<br>Cl       |
| 73                            | North                 | 7511*<br>7511S<br>7511M<br>7511L<br>7711S<br>7711M<br>7711L                                                          | Rp, Fm, ON                          | 2                          | DM                        |                     |
| 74                            | North                 | 7549*<br>7549M<br>7549L<br>7749S<br>7749M<br>7749L                                                                   | Rp, Fm, ON                          | 2                          |                           | Pest                |
| 75                            | North                 | 7531*<br>7531M<br>7531S<br>7531L<br>7731S<br>7731M<br>7731L                                                          | Rp, Fm, ON                          | 2                          |                           | PLE                 |
| 75                            | Acme                  | 27*                                                                                                                  | Rp, Fm, ON                          | 2                          |                           | PLE                 |
| 76                            | Willson               | 1225<br>S1225<br>1225S<br>S1225S<br>1225SR<br>S1225SR<br>S1225R<br>S1225SS<br>S1225SSS<br>1225SSS<br>1225R<br>1225SS | Rp, Fm, ON                          | 2                          |                           | SO2/HCl<br>Cl       |

# CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                       | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 77                            | Willson               | 122510<br>122510R<br>122510S<br>122510SS<br>122510SSS<br>S122510<br>S122510R<br>122510SR<br>S122510S<br>S122510SS<br>S122510SR<br>S122510SSS                                                             | Rp, Fm, ON                          | 2                          | DM                        | SO2/HCl<br>Cl       |
| 79                            | MSA                   | 448848<br>461009                                                                                                                                                                                         | Rp, Fm, Bm, ON                      | 2                          | DM                        | PLE/Pest            |
| 80                            | MSA                   | 448849<br>460853<br>462241<br>466249<br>466250<br>466251<br>466255<br>466528<br>466529<br>468015<br>468016<br>468017<br>468018<br>476726<br>476727<br>476728<br>479704 thru 479712<br>479714 thru 479722 | Rp, Fm, Bm, ON                      | 2                          | DM                        | PLE                 |
| 81                            | Pulmosan              | C256*<br>10009<br>10183<br>10219<br>10270                                                                                                                                                                | Rp, Fm, ON                          | 1                          |                           |                     |
| 82                            | AO                    | R4053*<br>R5053*<br>R6053*                                                                                                                                                                               | Rp, Fm, ON                          | 2                          |                           | SO2/HCl/<br>Cl      |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                       | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 83                            | AO                    | R4055<br>S4055<br>R5055<br>S5055<br>R6055<br>S6055                                                       | Rp,Fm, ON                           | 2                          | DM                        |                     |
| 84                            | AO                    | R8151<br>S8151                                                                                           | Rp,Fm, ON                           | 1                          |                           |                     |
| 85                            | AO                    | R8153<br>S8153                                                                                           | Rp,Fm, ON                           | 1                          |                           | SO2/HCl<br>Cl       |
| 86                            | Binks                 | 40-129*                                                                                                  | Rp,Fm, ON                           | 2                          |                           |                     |
| 87                            | Binks                 | 40-128<br>40-141<br>40-143<br>40-196<br>40-197<br>40-198                                                 | Rp,Fm, ON                           | 2                          | DM                        | PLE                 |
| 88                            | Glendale              | GR1621<br>GR2021<br>GR4021<br>GR8021                                                                     | Rp,Fm, ON                           | 2                          |                           |                     |
| 89                            | Glendale              | GR1621-10<br>GR2021-10<br>GR4021-10<br>GR8021-20                                                         | Rp,Fm, ON                           | 2                          | DM                        |                     |
| 90                            | Glendale              | GR1621-20*<br>GR1621-60<br>GR2021-20*<br>GR2021-60<br>GR4021-20*<br>GR4021-60<br>GR8021-20*<br>GR8021-60 | Rp,Fm, ON                           | 2                          |                           | PLE                 |

CHEMICAL CARTRIDGES -- ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                       | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 91                            | Pulmosan              | C259*<br>10024<br>10198<br>10222<br>10282                | Rp,Fm, ON                           | 1                          | DM                        |                     |
| 92                            | AO                    | R8191P<br>S8191P                                         | Rp,Fm, ON                           | 1                          | DM                        | PLE                 |
| 93                            | AO                    | R8151P<br>S8151P                                         | Rp,Fm, ON                           | 1                          | DM                        | PLE                 |
| 94                            | AO                    | R4051P*<br>R5051P*<br>R6051P*                            | Rp,Fm, ON                           | 2                          | DM                        | PLE                 |
| 96                            | DeVilbiss             | MSP-505*<br>MSP-505-1*                                   | Rp,Fm, ON                           | 2                          | DM                        | PLE                 |
| 97                            | AO                    | R4091P<br>S4091P<br>R5091P<br>S5091P<br>R6091P<br>S6091P | Rp,Fm, ON                           | 2                          | DM                        | PLE                 |
| 99                            | Cesco                 | 94R40*                                                   | Rp,Fm, ON                           | 2                          |                           |                     |
| 100                           | Pulmosan              | C-251*<br>10006<br>10180<br>10225<br>10267<br>11030      | Rp,Fm, ON                           | 1                          |                           | PLE                 |
| 100                           | Fibre Metal           | C-251*<br>10180*                                         | Rp,Fm, ON                           | 1                          |                           | PLE                 |
| 100                           | Shoplyne              | 10006<br>10267<br>10180<br>10225                         | Rp,FM, ON                           | 1                          |                           | PLE                 |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                               | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 101                           | North                 | 7401L*<br>7401M*                                                                 | Rp, Fm, ON                          | 1                          |                           |                     |
| 102                           | North                 | 75BP01*<br>75BP01M<br>75BP01L                                                    | Rp, Bm, ON                          | 2                          |                           |                     |
| 103                           | North                 | 75BP11*<br>75BP11M<br>75BP11L                                                    | Rp, Bm, ON                          | 2                          | DM                        |                     |
| 104                           | North                 | 75BP03*<br>75BP03M<br>75BP03L                                                    | Rp, Bm, ON                          | 2                          |                           | SO2/HCl<br>Cl       |
| 105                           | North                 | 75BP13*<br>75BP13M<br>75BP13L                                                    | Rp, Bm, ON                          | 2                          | DM                        | SO2/HCl<br>Cl       |
| 106                           | AO                    | R4058<br>S4058<br>R5058<br>S5058<br>R6058<br>S6058                               | Rp, Fm, ON                          | 2                          | DFM                       | Pest                |
| 107                           | Cover                 | 1482-G100<br>1482-L-G100<br>1482-S-G100<br>1585S-G100<br>1585-G100<br>1585L-G100 | Rp, Fm, ON                          | 2                          |                           |                     |
| 107                           | Sellstrom             | 315-G100                                                                         | Rp, Fm, ON                          | 2                          |                           |                     |
| 107                           | Eastern               | E451                                                                             | Rp, Fm, ON                          | 2                          |                           |                     |
| 107                           | Safe-Tex              | 236-G100*                                                                        | Rp, Fm, ON                          | 2                          |                           |                     |
| 113                           | Scott                 | 6411-0013*<br>6412-0013*<br>6413-0013*<br>6421-0013*<br>6422-0013*<br>6423-0013* | Rp, Fm, ON                          | 2                          |                           |                     |

# CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 113 Cont.                     |                       | 64-OV<br>64E-OV<br>64M-OV<br>64ME-OV<br>64S-OV<br>64SE-OV                                                                                                 |                                     |                            |                           |                     |
| 114                           | Scott                 | 6411-0113*<br>6412-0113*<br>6413-0113*<br>6421-0113*<br>6422-0113*<br>6423-0113*<br>64-OV-D<br>64E-OV-D<br>64M-OV-D<br>64ME-OV-D<br>64S-OV-D<br>64SE-OV-D | Rp, Fm, ON                          | 2                          | DMZ                       |                     |
| 117                           | Scott                 | 6412-0313*<br>6422-0313*<br>6411-0313*<br>6413-0313*<br>6421-0313*<br>6423-0313*<br>64-OVP<br>64E-OVP<br>64M-OVP<br>64ME-OVP<br>64S-OVP<br>64SE-OVP       | Rp, Fm, ON                          | 2                          | DFMZR                     | PLE/Pest            |
| 118                           | US Safety             | 150T20<br>150L20                                                                                                                                          | Fm, ON                              | 2                          |                           |                     |
| 119                           | Cesco                 | 95RC25<br>95SMRC25                                                                                                                                        | Fm, ON                              | 2                          |                           |                     |
| 120                           | U.S. Safety           | 150T23<br>150L23                                                                                                                                          | Rp, Fm, ON                          | 2                          | DM                        |                     |
| 121                           | Cesco                 | 95RC45<br>95SMRC45                                                                                                                                        | Rp, Fm, ON                          | 2                          | DM                        |                     |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM   | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|-----------------------------|---------------------|
| 123                           | 3M                    | 8712<br>8734<br>8741<br>8751                                                                                   | Su, ON                              | 1                          | DM<br>8734, 8741, 8751 only | PLE/Pest            |
| 124                           | Cover                 | 1482-G100-F102<br>1482-S-G100-F102<br>1482-L-G100-F102<br>1585S-G100-F102<br>1585-G100-F102<br>1585L-G100-F102 | Rp,Fm, ON                           | 2                          |                             | PLE                 |
| 124                           | Eastern               | E454                                                                                                           | Rp,Fm, ON                           | 2                          |                             | PLE                 |
| 124                           | Sellstrom             | 315-G100-F102                                                                                                  | Rp,Fm, ON                           | 2                          |                             | PLE                 |
| 124                           | Safe-Tex              | 236-G100-F102*                                                                                                 | Rp,Fm, ON                           | 2                          |                             | PLE                 |
| 125                           | US Safety             | 150T24                                                                                                         | Rp,Fm, ON                           | 2                          |                             | PLE                 |
| 126                           | Cesco                 | 95RC35                                                                                                         | Rp,Fm, ON                           | 2                          |                             | PLE                 |
| 127                           | Stewart-<br>Warner    | 7931*                                                                                                          | Rp,Fm, ON                           | 2                          |                             | PLE                 |
| 128                           | Northcott             | 70-450*                                                                                                        | Rp,Fm, ON                           | 2                          |                             | PLE                 |
| 130                           | Willson               | 1621<br>1721                                                                                                   | Rp,Fm, FF                           | 2                          |                             |                     |
| 131                           | Willson               | 162113<br>172113                                                                                               | Rp,Fm, FF                           | 2                          | DMF                         |                     |
| 133                           | Willson               | 162115<br>172115                                                                                               | Rp,Fm, FF                           | 2                          | DM                          | PLE/Pest            |



## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 134                           | Willson               | 162110<br>172110                               | Rp,Fm, FF                           | 2                          | DM                        |                     |
| 141                           | Willson               | 1625<br>1725                                   | Rp,Fm, FF                           | 2                          |                           | SO2/HCl<br>Cl       |
| 142                           | Willson               | 162510<br>172510                               | Rp,Fm, FF                           | 2                          | DM                        | SO2/HCl<br>Cl       |
| 144                           | MSA                   | 461848                                         | Rp,Fm, FF                           | 2                          | DM                        |                     |
| 146                           | MSA                   | 461850                                         | Rp,Fm, FF                           | 2                          | DM                        | SO2/HCl<br>CH2-O/Cl |
| 149                           | MSA                   | 461846<br>466256<br>466257<br>471726<br>471727 | Rp,Fm, FF                           | 2                          | DM                        | PLE                 |
| 151                           | MSA                   | 461852                                         | Rp,Fm, FF                           | 2                          | DM                        |                     |
| 153                           | MSA                   | 461855                                         | Rp,Fm, FF                           | 2                          | HA                        | SO2/HCl<br>CH2-O/Cl |
| 154                           | MSA                   | 461856                                         | Rp,Fm, FF                           | 2                          | DFMR                      | SO2/HCl<br>CH2-O/Cl |
| 155                           | MSA                   | 461853                                         | Rp,Fm, FF                           | 2                          | HA                        | PLE                 |
| 157                           | MSA                   | 460965<br>462238                               | Rp,Fm,Bm, ON                        | 2                          | DM                        |                     |
| 159                           | MSA                   | 460847<br>461013                               | Rp,Fm,Bm, ON                        | 2                          | HA                        | SO2/HCl<br>CH2-O/Cl |
| 160                           | MSA                   | 460848<br>461014                               | Rp,Fm,Bm, ON                        | 2                          | DFMR                      | SO2/HCl<br>CH2-O/Cl |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                 | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor                                                                    |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|----------------------------------------------------------------------------------------|
| TC-23C-            |                       |                                                                                                                                                                                                    |                                     |                            |                           |                                                                                        |
| 161                | MSA                   | 460846<br>461012                                                                                                                                                                                   | Rp, Fm, Bm, ON                      | 2                          | HA                        | PLE/Pest                                                                               |
| 163                | Cover                 | 1482-G104<br>1482-S-G104<br>1482-L-G104<br>1482-G104-F100<br>1482-S-G104-F100<br>1482-L-G104-F100<br>1585S-G104<br>1585-G104<br>1585L-G104<br>1585S-G104-F104<br>1585-G104-F104<br>1585L-G104-F104 | Rp, Fm, ON                          | 2                          | DMZ                       | SO2/HCl<br>Cl<br>1482-G104-F100 only<br>1482-S-G104-F100 only<br>1482-L-G104-F100 only |
| 163                | Sellstrom             | 315-G104<br>315-G104-F100                                                                                                                                                                          | Rp, Fm, ON                          | 2                          | DMZ                       | SO2/HCl<br>Cl                                                                          |
| 163                | Eastern               | E452                                                                                                                                                                                               | Rp, Fm, ON                          | 2                          | DMZ                       | SO2/HCl<br>Cl                                                                          |
| 166                | Cesco                 | 95RC85<br>95SMRC85                                                                                                                                                                                 | Fm, ON                              | 2                          |                           | SO2/HCl<br>Cl                                                                          |
| 167                | Cesco                 | 95RC105<br>95SMRC105                                                                                                                                                                               | Rp, Fm, ON                          | 2                          | DM                        | SO2/HCl<br>Cl                                                                          |
| 170                | US Safety             | 150T26<br>150L26                                                                                                                                                                                   | Fm, ON                              | 2                          |                           | SO2/HCl<br>Cl                                                                          |
| 171                | US Safety             | 150T28<br>150L28                                                                                                                                                                                   | Rp, Fm, ON                          | 2                          | DM                        | SO2/HCl<br>Cl                                                                          |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                          | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                                                             |                                     |                            |                           |                     |
| 172                | Scott                 | 6411-0015*<br>6412-0015*<br>6413-0015*<br>6421-0015*<br>6422-0015*<br>6423-0015*<br>64-OA<br>64E-OA<br>64M-OA<br>64ME-OA<br>64S-OA<br>64SE-OA<br>604032-15* | Fm, ON                              | 2                          |                           | SO2/HCl<br>CH2-O/Cl |
| 174                | Scott                 | 6411-0115*<br>6412-0115*<br>6413-0115*<br>6421-0115*<br>6422-0115*<br>6423-0115*<br>64-OA-D<br>64E-OA-D<br>64M-OA-D<br>64ME-OA-D<br>64S-OA-D<br>64SE-OA-D   | Fm, ON                              | 2                          | DMZ                       | SO2/HCl<br>CH2-O/Cl |
| 175                | North                 | 75BP31*<br>75BP31M<br>75BP31L                                                                                                                               | Rp, Bm, ON                          | 2                          |                           | PLE                 |
| 178                | North                 | 75BP49*<br>75BP49M<br>75BP49L                                                                                                                               | Rp, Bm, ON                          | 2                          |                           | Pest                |
| 180                | North                 | 7601<br>7601S<br>7601N*<br>7601SN*                                                                                                                          | Rp, Fm, FF                          | 2                          |                           |                     |
| 181                | North                 | 7603<br>7603S<br>7603N*<br>7603SN*                                                                                                                          | Rp, Fm, FF                          | 2                          |                           | SO2/HCl<br>Cl       |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                |                                     |                            |                           |                     |
| 185                | North                 | 7611<br>7611S<br>7611N*<br>7611SN*                                                                             | Rp, Fm, FF                          | 2                          | DM                        |                     |
| 186                | North                 | 7613<br>7613S<br>7613N*<br>7613SN*                                                                             | Rp, Fm, FF                          | 2                          | DM                        | SO2/HCl<br>Cl       |
| 188                | North                 | 7631<br>7631S<br>7631N*<br>7631SN*                                                                             | Rp, Fm, FF                          | 2                          |                           | PLE                 |
| 190                | North                 | 7649<br>7649S<br>7649N*<br>7649SN*                                                                             | Rp, Fm, FF                          | 2                          |                           | Pest                |
| 196                | 3M                    | 8723<br>8724                                                                                                   | Su, ON                              | 1                          | DM<br>8724 only           | Cl                  |
| 198                | US Safety             | 150T30*                                                                                                        | Fm, ON                              | 2                          |                           | Pest                |
| 199                | Cesco                 | 95RC125*                                                                                                       | Fm, ON                              | 2                          |                           | Pest                |
| 201                | MSA                   | 465986<br>466239<br>466240<br>466241<br>466526<br>466527                                                       | Rp, Fm, ON                          | 2                          | DM                        | PLE                 |
| 202                | Cover                 |                                                                                                                | Rp, Fm, ON                          | 2                          | DM                        | PLE                 |
|                    |                       | 1482-G100-F104<br>1482-S-G100-F104<br>1482-L-G100-F104<br>1585S-G100-F104<br>1585-G100-F104<br>1585L-G100-F104 |                                     |                            |                           |                     |

CHEMICAL CARTRIDGES -- ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                          | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 202                           | Eastern               | E455                                                        | Rp, Fm, ON                          | 2                          | DM                        | PLE                 |
| 202                           | Sellstrom             | 315-G100-F104                                               | Rp, Fm, ON                          | 2                          | DM                        | PLE                 |
| 204                           | North                 | 7581M<br>7781M<br>7581S<br>7781S<br>7581L<br>7781L<br>7581* | Rp, Fm, ON                          | 2                          | HRA                       | PLE                 |
| 205                           | North                 | 75BP81*<br>75BP81M<br>75BP81L                               | Rp, Bm, ON                          | 2                          | HRA                       | PLE                 |
| 206                           | North                 | 7681<br>7681S                                               | Rp, Fm, FF                          | 2                          | HRA                       | PLE                 |
| 210                           | North                 | 7583M<br>7783M<br>7583S<br>7783S<br>7583L<br>7783L<br>7583* | Rp, Fm, ON                          | 2                          | HRA                       | SO2/HC1<br>Cl       |
| 211                           | North                 | 75BP83*<br>75BP83M<br>75BP83L                               | Rp, Bm, ON                          | 2                          | HRA                       | SO2/HC1<br>Cl       |
| 212                           | North                 | 7683S<br>7683                                               | Rp, Fm, FF                          | 2                          | HRA                       | SO2/HC1<br>Cl       |
| 216                           | 3M                    | 8725<br>8726                                                | Su, ON                              | 1                          | DM<br>8726 only           | SO2/HC1<br>Cl       |
| 219                           | Scott                 | 6470-0013*<br>6480-0013*<br>65-OV<br>65S-OV                 | Rp, Fm, FF                          | 2                          |                           |                     |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                              | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 220                           | Scott                 | 6470-0113*<br>6480-0113*<br>65-OV-D<br>65S-OV-D | Rp,Fm, FF                           | 2                          | DM                        |                     |
| 221                           | Scott                 | 6470-0015*<br>6480-0015*<br>65-OA<br>65S-OA     | Rp,Fm, FF                           | 2                          |                           | SO2/HCl<br>CH2-O/Cl |
| 222                           | Scott                 | 6470-0115*<br>6480-0115*<br>65-OA-D<br>65S-OA-D | Rp,Fm, FF                           | 2                          | DMZ                       | SO2/HCl<br>CH2-O/Cl |
| 224                           | Scott                 | 6470-0313*<br>6480-0313*<br>65-OVP<br>65S-OVP   | Rp, Fm, FF                          | 2                          | DFMZR                     | PLE/Pest            |
| 234                           | AO                    | R7053*                                          | Rp,Fm, FF                           | 2                          |                           | SO2/HCl<br>Cl       |
| 236                           | AO                    | R7051*                                          | Rp,Fm, FF                           | 2                          |                           |                     |
| 237                           | AO                    | R7055<br>S7055                                  | Rp,Fm, FF                           | 2                          | DM                        |                     |
| 238                           | AO                    | R7058<br>S7058                                  | Rp,Fm, FF                           | 2                          | DMF                       | Pest                |
| 239                           | AO                    | R7051P*                                         | Rp,Fm, FF                           | 2                          |                           | PLE                 |
| 240                           | AO                    | R7091P<br>S7091P                                | Rp,Fm, FF                           | 2                          | DM                        | PLE                 |
| 241                           | Glendale              | GR-1623<br>GR-2023<br>GR-4023<br>GR-8023        | Rp,Fm, ON                           | 2                          |                           | SO2/HCl<br>Cl       |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                                                           |                                     |                            |                           |                     |
| 242                | Glendale              | GR1623-10<br>GR2023-10<br>GR4023-10<br>GR8023-10                                                                                                          | Rp,Fm, ON                           | 2                          | DM                        | SO2/HCl<br>Cl       |
| 243                | MSA                   | 466165                                                                                                                                                    | Rp,Fm, ON                           | 2                          | HA                        |                     |
| 244                | MSA                   | 466163                                                                                                                                                    | Rp,Bm, ON                           | 2                          | HA                        |                     |
| 245                | MSA                   | 466164                                                                                                                                                    | Rp,Fm, FF                           | 2                          | HA                        |                     |
| 250                | Scott                 | 6411-0315*<br>6412-0315*<br>6413-0315*<br>6421-0315*<br>6422-0315*<br>6423-0315*<br>64-OA-F<br>64M-OA-F<br>64ME-OA-F<br>64E-OA-F<br>64S-OA-F<br>64SE-OA-F | Rp,Fm, ON                           | 2                          | DFMZR                     | SO2/HCl<br>CH2-O/Cl |
| 251                | Scott                 | 6470-0315*<br>6480-0315*<br>65-OA-F<br>65S-OA-F                                                                                                           | Rp,Fm, FF                           | 2                          | DFMZR                     | SO2/HCl<br>CH2-O/Cl |
| 258                | Willson               | 122116<br>122116R<br>122116S<br>122116SR<br>122116SS<br>122116SSS<br>S122116<br>S122116R<br>S122116S<br>S122116SS<br>S122116SSS<br>S122116SR              | Rp,Fm, ON                           | 2                          | DM                        | PLE                 |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                     | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 259                           | Willson               | 162116<br>172116                                       | Rp,Fm, FF                           | 2                          | DM                        | PLE                 |
| 260                           | MSA                   | 466903                                                 | Rp,Fm, ON                           | 2                          | DM                        | SO2/HCl<br>CH2-O/Cl |
| 261                           | MSA                   | 466902                                                 | Rp,Bm, ON                           | 2                          | DM                        | SO2/HCl<br>CH2-O/Cl |
| 262                           | MSA                   | 466904                                                 | Rp,Fm, FF                           | 2                          | DM                        | SO2/HCl<br>CH2-O/Cl |
| 263                           | Cesco                 | 96RC45                                                 | Rp,Fm, FF                           | 2                          | DM                        |                     |
| 264                           | US Safety             | 151T23                                                 | Rp,Fm, FF                           | 2                          | DM                        |                     |
| 267                           | Cesco                 | 96RC105                                                | Rp,Fm, FF                           | 2                          | DM                        | SO2/HCl<br>Cl       |
| 268                           | US Safety             | 151T28                                                 | Rp,Fm, FF                           | 2                          | DM                        | SO2/HCl<br>Cl       |
| 271                           | Cesco                 | 96RC35*                                                | Rp,Fm, FF                           | 2                          |                           | PLE                 |
| 272                           | US Safety             | 151T24*                                                | Rp,Fm, FF                           | 2                          |                           | PLE                 |
| 275                           | Cover                 | 1482-G100-F108<br>1482-S-G100-F108<br>1482-L-G100-F108 | Rp,Fm, ON                           | 2                          | DFM                       |                     |
| 276                           | Cover                 | 1482-G100-F100<br>1482-S-G100-F100<br>1482-L-G100-F100 | Rp,Fm, ON                           | 2                          | DM                        |                     |



## CHEMICAL CARTRIDGES -- ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                       | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor        |
|-------------------------------|-----------------------|----------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|----------------------------|
| 277                           | DeVilbiss             | MSP-507                                                  | Rp, Fm, ON                          | 1                          |                           |                            |
| 278                           | DeVilbiss             | MSP-506                                                  | Rp, Fm, ON                          | 1                          | DM                        | PLE                        |
| 281                           | AO                    | R4563<br>S4563<br>R5563<br>S5563<br>R6563<br>S6563       | Rp, Fm, ON                          | 2                          | DFM                       | SO2/HCl<br>ClO2/Pest<br>Cl |
| 282                           | AO                    | R7563<br>S7563                                           | Rp, Fm, FF                          | 2                          | DFM                       | SO2/HCl<br>ClO2/Pest<br>Cl |
| 285                           | MSA                   | 468023<br>468024<br>468025<br>471728<br>471729           | Rp, FM, FF                          | 2                          | DM                        | PLE                        |
| 286                           | MSA                   | 468026<br>468027<br>468028<br>468029<br>468030<br>468031 | Rp, BM, ON                          | 2                          | DM                        | PLE                        |
| 287                           | USD                   | 2101-00<br>2301-00<br>2201-00                            | Rp, FM, ON                          | 2                          |                           |                            |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 293                | Willson               | 1231<br>1231R<br>1231S<br>1231SR<br>1231SS<br>1231SSS<br>S1231<br>S1231R<br>S1231S<br>S1231SR<br>S1231SS<br>S1231SSS                         | Rp, FM, ON                          | 2                          |                           |                     |
| 294                | Willson               | 123112<br>123112R<br>123112S<br>123112SR<br>123112SS<br>123112SSS<br>S123112<br>S123112R<br>S123112S<br>S123112SR<br>S123112SS<br>S123112SSS | Rp, FM, ON                          | 2                          | HA                        |                     |
| 295                | Willson               | 1631<br>1731                                                                                                                                 | Rp, FM, FF                          | 2                          |                           |                     |
| 296                | Willson               | 163112<br>173112                                                                                                                             | Rp, FM, FF                          | 2                          | HA                        |                     |
| 297                | 3M                    | 8729                                                                                                                                         | SU, ON                              | 1                          |                           |                     |
| 298                | Willson               | 1235<br>1235R<br>1235S<br>1235SR<br>1235SSS<br>1235SS<br>S1235<br>S1235R<br>S1235S<br>S1235SR<br>S1235SS<br>S1235SSS                         | Rp, Fm, ON                          | 2                          |                           | SO2/HCl<br>Cl       |

## CHEMICAL CARTRIDGES -- ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 299                           | Willson               | 123512<br>123512R<br>123512S<br>123512SR<br>123512SS<br>123512SSS<br>S123512<br>S123512R<br>S123512S<br>S123512SR<br>S123512SS<br>S123512SSS | Rp, FM, ON                          | 2                          | HA                        | SO2/HCl<br>Cl       |
| 300                           | Willson               | 1635<br>1735                                                                                                                                 | Rp, FM, FF                          | 2                          |                           | SO2/HCl<br>Cl       |
| 301                           | Willson               | 163512<br>173512                                                                                                                             | Rp, FM, FF                          | 2                          | HA                        | SO2/HCl<br>Cl       |
| 302                           | Cesco                 | 95RC20<br>95SMRC20                                                                                                                           | Rp, FM, ON                          | 2                          | HRA                       |                     |
| 303                           | US Safety             | 150T40<br>150L40                                                                                                                             | Rp, FM, ON                          | 2                          | HRA                       |                     |
| 304                           | Cesco                 | 96RC20                                                                                                                                       | Rp, FM, FF                          | 2                          | HRA                       |                     |
| 305                           | US Safety             | 151T40                                                                                                                                       | Rp, FM, FF                          | 2                          | HRA                       |                     |
| 310                           | Cesco                 | 95RC80<br>95SMRC80                                                                                                                           | Rp, FM, ON                          | 2                          | HRA                       | SO2/HCl<br>Cl       |
| 311                           | US Safety             | 150T46<br>150L46                                                                                                                             | Rp, FM, ON                          | 2                          | HRA                       | SO2/HCl<br>Cl       |
| 312                           | Cesco                 | 96RC80                                                                                                                                       | Rp, FM, FF                          | 2                          | HRA                       | SO2/HCl<br>Cl       |
| 313                           | US Safety             | 151T46                                                                                                                                       | Rp, FM, FF                          | 2                          | HRA                       | SO2/HCl<br>Cl       |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 318                | USD                   | 2203-00<br>2103-00<br>2303-00                                                | Rp, FM, ON                          | 2                          |                           | SO2/HCl<br>CH2-O/C1 |
| 320                | Pulmosan              | 10015<br>10189<br>10243<br>10276                                             | Rp, FM, ON                          | 1                          |                           | SO2/HCl<br>C1       |
| 321                | USD                   | 2221-00<br>2121-00<br>2321-00                                                | Rp, FM, ON                          | 2                          | DM                        | PLE                 |
| 322                | USD                   | 2211-00<br>2111-00<br>2311-00                                                | Rp, FM , ON                         | 2                          | DM                        |                     |
| 323                | USD                   | 2131-00*<br>2231-00*<br>2331-00*                                             | Rp, FM, ON                          | 2                          | DFMR                      | Pest                |
| 324                | Pulmosan              | 10030<br>10255<br>10204<br>10288                                             | Rp, FM, ON                          | 1                          | DM                        | SO2/HCl<br>C1       |
| 325                | AO                    | R4051A<br>S4051A<br>R5051A<br>S5061A<br>R6051A<br>S6051A<br>R5551A<br>S5551A | Rp, FM , ON                         | 2                          |                           |                     |
| 326                | AO                    | R7051A<br>S7051A<br>R7751A<br>S7751A                                         | Rp, FM , FF                         | 2                          |                           |                     |

CHEMICAL CARTRIDGES -- ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 327                           | AO                    | R4051AD<br>S4051AD<br>R5051AD<br>S5051AD<br>R6051AD<br>S6051AD<br>R5551AD<br>S5551AD | Rp, FM, ON                          | 2                          | DM                        |                     |
| 328                           | AO                    | R7051AD<br>S7051AD<br>R7751AD<br>S7751AD                                             | Rp, FM, FF                          | 2                          | DM                        |                     |
| 333                           | AO                    | R4051AP<br>S4051AP<br>R5051AP<br>S5051AP<br>R6051AP<br>S6051AP<br>R5551AP<br>S5551AP | Rp, FM, ON                          | 2                          | DM                        | PLE                 |
| 334                           | AO                    | R7051AP<br>S7051AP<br>R7751AP<br>S7751AP                                             | Rp, FM, FF                          | 2                          | DM                        | PLE                 |
| 335                           | DeVilbiss             | MSP-508<br>MSP-9508                                                                  | Rp, FM, ON                          | 2                          | DM                        | PLE                 |
| 336                           | US Safety             | 150T35<br>150L35                                                                     | Rp,Fm, ON                           | 2                          | DFMR                      | PLE/Pest            |
| 337                           | Cesco                 | 95RC115<br>95SMRC115                                                                 | Rp,Fm, ON                           | 2                          | DFMR                      | PLE/Pest            |
| 338                           | US Safety             | 151T35                                                                               | Rp,Fm, FF                           | 2                          | DFMR                      | PLE/Pest            |

## CHEMICAL CARTRIDGES -- ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 343                           | AO                    | R4053A<br>S4053A<br>R5053A<br>S5053A<br>R6053A<br>S6053A<br>R5553A<br>S5553A         | Rp,Fm, ON                           | 2                          |                           | SO2/HCl<br>ClO2/Cl  |
| 344                           | AO                    | R7053A<br>S7053A<br>R7753A<br>S7753A                                                 | Rp,Bm, FF                           | 2                          |                           | SO2/HCl<br>ClO2/Cl  |
| 345                           | AO                    | R4053AD<br>S4053AD<br>R5053AD<br>S5053AD<br>R6053AD<br>S6053AD<br>R5553AD<br>S5553AD | Rp,Fm, ON                           | 2                          | DM                        | SO2/HCl<br>ClO2/Cl  |
| 346                           | AO                    | R7053AD<br>S7053AD<br>R7753AD<br>S7753AD                                             | Rp,Fm, FF                           | 2                          | DM                        | SO2/HCl<br>ClO2/Cl  |
| 348                           | Cesco                 | 96RC115                                                                              | Rp,Fm, FF                           | 2                          | DFM                       | PLE/Pest            |
| 349                           | North                 | 10001S<br>10001M                                                                     | Su, ON                              | 1                          |                           |                     |
| 351                           | USD                   | 3201-00                                                                              | Rp,Fm, FF                           | 2                          |                           |                     |
| 352                           | North                 | 10003S<br>10003M                                                                     | Su, ON                              | 1                          |                           | SO2/HCl<br>Cl       |
| 354                           | North                 | 10041S<br>10041M                                                                     | Su, ON                              | 1                          | DM                        | PLE/Pest            |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 355                           | North                 | 10011S<br>10011M                                                                                                     | Su, ON                              | 1                          | DM                        |                     |
| 357                           | North                 | 10013S<br>10013M                                                                                                     | Su, ON                              | 1                          | DM                        | SO2/HCl<br>Cl       |
| 360                           | Willson               | 3021<br>3021R<br>3021S<br>3021SR<br>3021SS<br>3021SSS<br>S3021<br>S3021S<br>S3021R<br>S3021SR<br>S3021SS<br>S3021SSS | Rp, Bm, ON                          | 2                          |                           |                     |
| 361                           | Willson               | 3121<br>3221                                                                                                         | Rp, Bm, FF                          | 2                          |                           |                     |
| 362                           | Willson               | 3031<br>3031R<br>3031S<br>3031SR<br>3031SS<br>3031SSS<br>S3031<br>S3031R<br>S3031S<br>S3031SR<br>S3031SS<br>S3031SSS | Rp, Bm, ON                          | 2                          |                           |                     |
| 363                           | Willson               | 3131<br>3231                                                                                                         | Rp, Bm, FF                          | 2                          |                           |                     |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 368                           | Willson               | 3025<br>3025R<br>3025S<br>3025SR<br>3025SS<br>3025SSS<br>S3025<br>3025R<br>S3025R<br>S3025S<br>S3025SS<br>S305SSS    | Rp, Bm, ON                          | 2                          |                           | SO2/HCl<br>Cl       |
| 369                           | Willson               | 3125<br>3225                                                                                                         | Rp, Bm, FF                          | 2                          |                           | SO2/HCl<br>Cl       |
| 370                           | Willson               | 3035<br>3035R<br>3035S<br>3035SR<br>3035SS<br>3035SSS<br>S3035<br>S3035S<br>S3035R<br>S3035SR<br>S3035SS<br>S3035SSS | Rp, Bm, ON                          | 2                          |                           | SO2/HCl<br>Cl       |
| 371                           | Willson               | 3135<br>3235                                                                                                         | Rp, Bm, FF                          | 2                          |                           | SO2/HCl<br>Cl       |
| 373                           | Stewart<br>Warner     | 7931+                                                                                                                | Rp, Fm, ON                          | 2                          | DFMR                      | PLE/Pest            |



## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 374                           | Willson               | 302115<br>302115R<br>302115S<br>302115SR<br>302115SS<br>302115SSS<br>S302115<br>S302115R<br>S302115S<br>S302115SR<br>S302115SS<br>S302115SSS | Rp, Bm, ON                          | 2                          | DM                        | PLE/Pest            |
| 375                           | Willson               | 312115<br>322115                                                                                                                             | Rp, Bm, FF                          | 2                          | DM                        | PLE/Pest            |
| 376                           | Willson               | 302116<br>302116R<br>302116S<br>302116SR<br>302116SS<br>302116SSS<br>S302116<br>S302116R<br>S302116S<br>S302116SR<br>S302116SS<br>S302116SSS | Rp, Bm, ON                          | 2                          | DM                        | PLE                 |
| 377                           | Willson               | 312116<br>322116                                                                                                                             | Rp, Bm, FF                          | 2                          | DM                        | PLE                 |
| 380                           | Willson               | 302510<br>302510R<br>302510S<br>302510SR<br>302510SS<br>302510SSS<br>S302510<br>S302510R<br>S302510S<br>S302510SR<br>S302510SS<br>S302510SSS | Rp, Bm, ON                          | 2                          | DM                        | SO2/HCl<br>Cl       |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 381                           | Willson               | 312510<br>322510                                                                                                                             | Rp,Bm, FF                           | 2                          | DM                        | SO2/HCl<br>Cl       |
| 382                           | Willson               | 303112<br>S303112<br>303112R<br>S303112R<br>303112S<br>S303112S<br>303112SR<br>S303112SR<br>S303112SS<br>S303112SSS<br>303112SS<br>303112SSS | Rp,Bm, ON                           | 2                          | HA                        |                     |
| 383                           | Willson               | 313112<br>323112                                                                                                                             | Rp,Bm, FF                           | 2                          | HA                        |                     |
| 386                           | Willson               | 303512<br>303512R<br>303512S<br>303512SR<br>303512SS<br>303512SSS<br>S303512<br>S303512S<br>S303512R<br>S303512SR<br>S303512SS<br>S303512SSS | Rp,Bm, ON                           | 2                          | HA                        | SO2/HCl<br>Cl       |
| 387                           | Willson               | 313512<br>323512                                                                                                                             | Rp,Bm, FF                           | 2                          | HA                        | SO2/HCl<br>Cl       |
| 388                           | Willson               | 312110<br>322110                                                                                                                             | Rp,Fm, FF                           | 2                          | DM                        |                     |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 389                           | Willson               | 302110<br>302110R<br>302110S<br>302110SR<br>302110SS<br>302110SSS<br>S302110<br>S302110R<br>S302110S<br>S302110SR<br>S302110SS<br>S302110SSS | Rp,Bm, ON                           | 2                          | DM                        |                     |
| 390                           | Willson               | 312113<br>322113                                                                                                                             | Rp,Bm, FF                           | 2                          | DFM                       |                     |
| 391                           | Willson               | 302113<br>302113R<br>302113S<br>302113SR<br>302113SS<br>302113SSS<br>S302113<br>S302113S<br>S302113R<br>S302113SR<br>S302113SS<br>S302113SSS | Rp,Bm, ON                           | 2                          | DFM                       |                     |
| 392                           | Northcott             | 70-450+                                                                                                                                      | Rp,Fm, ON                           | 2                          | DFMR                      | PLE/Pest            |
| 393                           | USD                   | 2133-00*<br>2233-00*<br>2333-00*                                                                                                             | Rp,Fm, ON                           | 2                          | DFMR                      | SO2/HCl<br>Cl       |
| 394                           | USD                   | 3233-00*                                                                                                                                     | Rp,Fm, FF                           | 2                          | DFMR                      | SO2/HCl<br>Cl       |
| 404                           | Glendale              | GR7021                                                                                                                                       | Rp,Fm, FF                           | 2                          |                           |                     |
| 405                           | Glendale              | GR7021-10                                                                                                                                    | Rp,Fm, FF                           | 2                          | DM                        |                     |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor        |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|----------------------------|
| 406                           | Glendale              | GR7021-20<br>GR7021-60                                                               | Rp,Fm, FF                           | 2                          |                           | PLE                        |
| 410                           | Glendale              | GR7023                                                                               | Rp,Fm, FF                           | 2                          |                           | SO2/HCl<br>Cl              |
| 411                           | Glendale              | GR7023-10                                                                            | Rp,Fm, FF                           | 2                          | DM                        | SO2/HCl<br>Cl              |
| 413                           | AO                    | R4051HE<br>S4051HE<br>R5051HE<br>S5051HE<br>R6051HE<br>S6051HE<br>R5551HE<br>S5551HE | Rp,Fm, ON                           | 2                          | HRA                       | Pest/PLE                   |
| 414                           | AO                    | R7051HE<br>S7051HE<br>R7751HE<br>S7751HE                                             | Rp,Fm, FF                           | 2                          | HRA                       | Pest/PLE                   |
| 417                           | AO                    | R4053HE<br>S4053HE<br>R5053HE<br>S5053HE<br>R6053HE<br>S6053HE<br>R5553HE<br>S5553HE | Rp,Fm, ON                           | 2                          | HRA                       | SO2/HCl<br>ClO2/Pest<br>Cl |
| 418                           | AO                    | R7053HE<br>S7053HE<br>R7753HE<br>S7753HE                                             | Rp,Fm, FF                           | 2                          | HRA                       | SO2/HCl<br>ClO2/Pest<br>Cl |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 421                           | Cover                 | 1482-G104-G208<br>1482-S-G104-G208<br>1482-L-G104-G208<br>1585S-G104-G208<br>1585-G104-G208<br>1585L-G104-G208 | Rp,Fm, ON                           | 2                          | HRA                       | SO2/HCl<br>Cl       |
| 424                           | AO                    | R4051E<br>R5051E<br>R6051E                                                                                     | Rp,Fm, ON                           | 2                          |                           |                     |
| 425                           | AO                    | R7051E                                                                                                         | Rp,Fm, FF                           | 2                          |                           |                     |
| 426                           | AO                    | R4051EP<br>R5051EP<br>R6051EP                                                                                  | Rp,Fm, ON                           | 2                          | DMZ                       | PLE                 |
| 427                           | AO                    | R7051EP                                                                                                        | Rp,Fm, FF                           | 2                          | DMZ                       | PLE                 |
| 428                           | DeVilbiss             | MSL-500                                                                                                        | Rp,Fm, ON                           | 2                          | DMZ                       | PLE                 |
| 433                           | USD                   | 2113-00<br>2213-00<br>2313-00                                                                                  | Rp,Fm, ON                           | 2                          | DM                        | SO2/HCl<br>CH2-O/Cl |
| 434                           | USD                   | 3213-00                                                                                                        | Rp,Fm, ON                           | 2                          | DM                        | SO2/HCl<br>CH2-O/Cl |
| 435                           | 3M                    | 7201                                                                                                           | Rp,Fm, ON                           | 2                          |                           |                     |
| 436                           | 3M                    | 7210                                                                                                           | Rp,Fm, ON                           | 2                          | DMZ                       | PLE                 |
| 437                           | 3M                    | 7207                                                                                                           | Rp,Fm, ON                           | 2                          | DMZ                       |                     |
| 438                           | 3M                    | 7212                                                                                                           | Rp,Fm, ON                           | 2                          | HRA                       |                     |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 446                           | 3M                    | 7203                                                                                                           | Rp, Fm, ON                          | 2                          |                           | SO2/HCl<br>Cl       |
| 447                           | 3M                    | 7209                                                                                                           | Rp, Fm, ON                          | 2                          | DMZ                       | SO2/HCl<br>Cl       |
| 448                           | 3M                    | 7214                                                                                                           | Rp, Fm, ON                          | 2                          | HRA                       | SO2/HCl<br>Cl       |
| 450                           | USD                   | 2193-00<br>2293-00<br>2393-00                                                                                  | Rp, Fm, ON                          | 2                          | HA                        | SO2/HCl<br>Cl       |
| 451                           | USD                   | 3293-00                                                                                                        | Rp, Fm, FF                          | 2                          | HA                        | SO2/HCl<br>Cl       |
| 452                           | USD                   | 2191-00<br>2291-00<br>2391-00                                                                                  | Rp, Fm, ON                          | 2                          | HA                        |                     |
| 453                           | USD                   | 3291-00                                                                                                        | Rp, Fm, FF                          | 2                          | HA                        |                     |
| 454                           | USD                   | 3203-00                                                                                                        | Rp, Fm, FF                          | 2                          |                           | SO2/HCl<br>CH2-O/Cl |
| 455                           | USD                   | 3221-00                                                                                                        | Rp, Fm, FF                          | 2                          | DM                        | PLE                 |
| 456                           | USD                   | 3231-00*                                                                                                       | Rp, Fm, FF                          | 2                          | DFMR                      | Pest                |
| 458                           | Cover                 | 1482-G100-G208<br>1482-L-G100-G208<br>1482-S-G100-G208<br>1585S-G100-G208<br>1585-G100-G208<br>1585L-G100-G208 | Rp, Fm, ON                          | 2                          | HRA                       |                     |
| 460                           | MSA                   | 472748                                                                                                         | Rp, Bm, ON                          | 2                          | DM                        |                     |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                               | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 462                           | MSA                   | 472750                                           | Rp,Bm, ON                           | 2                          | DM                        | SO2/HCl<br>CH2-O/Cl |
| 464                           | MSA                   | 472752                                           | Rp,Bm, ON                           | 2                          | DM                        | Pest                |
| 465                           | MSA                   | 472755                                           | Rp,Bm, ON                           | 2                          | HA                        | PLE/Pest            |
| 466                           | MSA                   | 472756                                           | Rp,Bm, ON                           | 2                          | HA                        | SO2/HCl<br>CH2-O/Cl |
| 467                           | MSA                   | 472757                                           | Rp,Bm, ON                           | 2                          | DFMR                      | SO2/HCl<br>CH2-O/Cl |
| 469                           | MSA                   | 472759                                           | Rp,Bm, ON                           | 2                          | DM                        |                     |
| 471                           | MSA                   | 472761                                           | Rp,Bm, ON                           | 2                          | HA                        |                     |
| 472                           | MSA                   | 472764                                           | Rp,Bm, ON                           | 2                          | DM                        | SO2/HCl<br>CH2-O/Cl |
| 473                           | MSA                   | 472736<br>472737<br>472738<br>479926 thru 479931 | Rp,Bm, ON                           | 2                          | DM                        | PLE                 |
| 474                           | MSA                   | 472739<br>472740<br>472741<br>480055 thru 480063 | Rp,Bm, ON                           | 2                          | DM                        | PLE                 |
| 476                           | Racal                 | BE1/A                                            | PAPR, HH                            | 3                          |                           |                     |
| 477                           | Racal                 | BE5/A                                            | PAPR, HH                            | 3                          |                           |                     |
| 478                           | Racal                 | BE6/A                                            | PAPR, HH                            | 3                          |                           |                     |
| 482                           | Racal                 | BE1/A-P3                                         | PAPR, HH                            | 3                          | HRA                       | Pest                |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 483                           | Racal                 | BE3/A-P3<br>BE7/A-P3                                                                 | PAPR, FF                            | 3                          | HRA                       | Pest                |
| 484                           | Racal                 | BE5/A-P3                                                                             | PAPR, HH                            | 3                          | HRA                       | Pest                |
| 485                           | Racal                 | BE6/A-P3                                                                             | PAPR, HH                            | 3                          | HRA                       | Pest                |
| 488                           | AO                    | R4055A<br>S4055A<br>R5055A<br>S5055A<br>R6055A<br>S6055A<br>R5555A<br>S5555A         | Rp,FM, ON                           | 2                          | DM                        |                     |
| 489                           | AO                    | R7055A<br>S7055A<br>R7755A<br>S7755A                                                 | Rp,FM, FP                           | 2                          | DM                        |                     |
| 490                           | AO                    | R4091AP<br>S4091AP<br>R5091AP<br>S5091AP<br>R6091AP<br>S6091AP<br>R5591AP<br>S5591AP | Rp,FM, ON                           | 2                          | DM                        | PLE                 |
| 491                           | AO                    | R7091AP<br>S7091AP<br>R7791AP<br>S7791AP                                             | Rp,FM, FF                           | 2                          | DM                        | PLE                 |
| 494                           | Pulmosan              | 10405                                                                                | Rp,FM, FF                           | 1                          |                           | PLE                 |
| 495                           | Pulmosan              | 10408                                                                                | Rp,FM, FF                           | 1                          |                           |                     |
| 497                           | Pulmosan              | 10414                                                                                | Rp, FM, FF                          | 1                          |                           | SO2/HCl<br>Cl       |



CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                    | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 499                           | Pulmosan              | 10420                                                                 | Rp,FM, FF                           | 1                          | DM                        |                     |
| 501                           | Pulmosan              | 10426                                                                 | Rp, FM, FF                          | 1                          | DM                        | SO2/HCl<br>Cl       |
| 504                           | Pirelli               | 4336.2021                                                             | Rp,FM, ON                           | 2                          |                           |                     |
| 509                           | MSA                   | 469727                                                                | Rp,FM, ON                           | 1                          |                           |                     |
| 510                           | MSA                   | 470200                                                                | Rp,FM, ON                           | 1                          | DM                        | PLE                 |
| 512                           | MSA                   | 469729                                                                | Rp,FM, ON                           | 1                          | DM                        | SO2/HCl<br>CH2-O/Cl |
| 521                           | Scott                 | 64-OA-H<br>64E-OA-H<br>64M-OA-H<br>64ME-OA-H<br>64S-OA-H<br>64SE-OA-H | Rp,FM, ON                           | 2                          | HRA                       | SO2/HCl<br>CH2-O/Cl |
| 522                           | Scott                 | 65-OA-H<br>65S-OA-H                                                   | Rp,FM, FF                           | 2                          | HRA                       | SO2/HCl<br>CH2-O/Cl |
| 523                           | Scott                 | 64-OV-H<br>64E-OV-H<br>64M-OV-H<br>64ME-OV-H<br>64S-OV-H<br>64SE-OV-H | Rp,FM, ON                           | 2                          | HRA                       | PLE/Pest            |
| 524                           | Scott                 | 65-OV-H<br>65S-OV-H                                                   | Rp,FM, FF                           | 2                          | HRA                       | PLE/Pest            |
| 529                           | Pirelli               | 4333.2021                                                             | Rp,FM, FF                           | 2                          |                           |                     |
| 530                           | USD                   | 2141-00<br>2241-00<br>2341-00                                         | Rp,FM, ON                           | 2                          | DFMR                      | Pest                |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                              | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-531         | USD                   | 3241-00                                         | Rp,FM, FF                           | 2                          | DFMR                      | Pest                |
| 532                | USD                   | 2143-00<br>2243-00<br>2343-00                   | Rp,FM, ON                           | 2                          | DFMR                      | SO2/HCl<br>CH2-O/Cl |
| 535                | Racal                 | BE3/AC<br>BE7/AC                                | PAPR, FF                            | 3                          |                           |                     |
| 538                | Safety<br>Supply      | F-160-OV<br>F-200-OV<br>F-800-OV                | Rp,FM, ON                           | 2                          |                           |                     |
| 539                | Safety<br>Supply      | F-700-OV                                        | Rp,FM, FF                           | 2                          |                           |                     |
| 540                | Safety<br>Supply      | F-160-OV-F-SP<br>F-200-OV-F-SP<br>F-800-OV-F-SP | Rp,FM, ON                           | 2                          |                           | PLE                 |
| 541                | Safety<br>Supply      | F-700-OV-F-SP                                   | Rp,FM, FF                           | 2                          |                           | PLE                 |
| 542                | Safety<br>Supply      | F-200-OA<br>F-160-OA<br>F-800-OA                | Rp,FM, ON                           | 2                          |                           | SO2/HCl<br>Cl       |
| 543                | Safety<br>Supply      | F-700-OA                                        | Rp,FM, FF                           | 2                          |                           | SO2/HCl<br>Cl       |
| 548                | Safety<br>Supply      | F-160-OV-F-P<br>F-200-OV-F-P<br>F-800-OV-F-P    | Rp,FM, ON                           | 2                          | DM                        |                     |
| 549                | Safety<br>Supply      | F-700-OV-F-P                                    | Rp,FM, FF                           | 2                          | DM                        |                     |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 552                           | Safety<br>Supply      | F-160-OA-F-P<br>F-200-OA-F-P<br>F-800-OA-F-P | Rp,FM, ON                           | 2                          | DM                        | HCl/SO2<br>Cl       |
| 553                           | Safety<br>Supply      | F-700-OA-F-P                                 | Rp,FM, FF                           | 2                          | DM                        | SO2/HCl<br>Cl       |
| 554                           | Pulmosan              | 10438<br>10441<br>11060                      | Rp,FM, ON                           | 2                          | DM                        | PLE                 |
| 555                           | Willson               | 1521<br>1521R<br>1521SS                      | Rp,FM, ON                           | 2                          |                           |                     |
| 556                           | Willson               | 3521<br>3521R<br>3521SS                      | Rp,FM, ON                           | 2                          |                           |                     |
| 557                           | Willson               | 1531<br>1531R<br>1531SS                      | Rp,FM, ON                           | 2                          |                           |                     |
| 558                           | Willson               | 3531<br>3531R<br>3531SS                      | Rp,FM, ON                           | 2                          |                           |                     |
| 563                           | Willson               | 1525<br>1525R<br>1525SS                      | Rp,FM, ON                           | 2                          |                           | SO2/HCl<br>Cl       |
| 564                           | Willson               | 3525<br>3525R<br>3525SS                      | Rp,FM, ON                           | 2                          |                           | SO2/HCl<br>Cl       |
| 565                           | Willson               | 1535<br>1535R<br>1535SS                      | Rp,FM, ON                           | 2                          |                           | SO2/HCl<br>Cl       |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 566                           | Willson               | 3535<br>3535R<br>3535SS        | Rp,FM, ON                           | 2                          |                           | SO2/HCl<br>Cl       |
| 567                           | Willson               | 152110<br>152110R<br>152110SS  | Rp,FM, ON                           | 2                          | DM                        |                     |
| 568                           | Willson               | 352110<br>3521100R<br>352110SS | Rp,FM, ON                           | 2                          | DM                        |                     |
| 569                           | Willson               | 152113<br>152113R<br>153113SS  | Rp,FM, ON                           | 2                          | DFM                       |                     |
| 570                           | Willson               | 352113<br>352113R<br>352113SS  | Rp,FM, ON                           | 2                          | DFM                       |                     |
| 571                           | Willson               | 152115<br>152115R<br>152115SS  | Rp,FM, ON                           | 2                          | DM                        | PLE/Pest            |
| 572                           | Willson               | 352115<br>352115R<br>352115SS  | Rp,FM, ON                           | 2                          | DM                        | PLE/Pest            |
| 573                           | Willson               | 152116<br>152116R<br>152116SS  | Rp,FM, ON                           | 2                          | DM                        | PLE                 |
| 574                           | Willson               | 352116<br>352116R<br>352116SS  | Rp,FM, ON                           | 2                          | DM                        | PLE                 |
| 577                           | Willson               | 152510<br>152510R<br>152510SS  | Rp,FM, ON                           | 2                          | DM                        | SO2/HCl<br>Cl       |

## CHEMICAL CARTRIDGES -- ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor        |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|----------------------------|
| 578                           | Willson               | 352510<br>352510R<br>352510SS                                                  | Rp,FM, ON                           | 2                          | DM                        | SO2/HCl<br>Cl              |
| 579                           | Willson               | 153112<br>153112R<br>153112SS                                                  | Rp,FM, ON                           | 2                          | HA                        |                            |
| 580                           | Willson               | 353112<br>353112R<br>353112SS                                                  | Rp,FM, ON                           | 2                          | HA                        |                            |
| 583                           | Willson               | 153512<br>153512R<br>153512SS                                                  | Rp,FM, ON                           | 2                          | HA                        | SO2/HCl<br>Cl              |
| 584                           | Willson               | 353512<br>353512R<br>353512SS                                                  | Rp,FM, ON                           | 2                          | HA                        | SO2/HCl<br>Cl              |
| 585                           | AO                    | R4058A<br>S4058A<br>R5058A<br>S5058A<br>R6058A<br>S6058A<br>R5558A<br>S5558A   | Rp,FM, ON                           | 2                          | DFM                       | Pest                       |
| 586                           | AO                    | R7058A<br>S7058A<br>R7758A<br>S7758A                                           | Rp,FM, ON                           | 2                          | DFM                       | Pest                       |
| 587                           | AO                    | R4563A<br>S4563A<br>R5563A<br>S5563A<br>R6563A<br>S6563A<br>R55563A<br>S55563A | Rp,FM, ON                           | 2                          | DFM                       | SO2/HCl<br>ClO2/Pest<br>Cl |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                     | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor        |
|-------------------------------|-----------------------|----------------------------------------|-------------------------------------|----------------------------|---------------------------|----------------------------|
| 588                           | AO                    | R7563A<br>S7563A<br>R77563A<br>S77563A | Rp,FM, FF                           | 2                          | DFM                       | SO2/HCl<br>ClO2/Pest<br>Cl |
| 602                           | Racal                 | BE17/AP3                               | PAPR, HH                            | 3                          | HRA                       | Pest                       |
| 605                           | Racal                 | BE1/AE                                 | PAPR, HH                            | 3                          |                           | SO2/HCl<br>Cl              |
| 606                           | Racal                 | BE3/AE<br>BE7/AE                       | PAPR, FF                            | 3                          |                           | SO2/HCl<br>Cl              |
| 607                           | Racal                 | BE5/AE                                 | PAPR, HH                            | 3                          |                           | SO2/HCl<br>Cl              |
| 608                           | Racal                 | BE6/AE                                 | PAPR, HH                            | 3                          |                           | SO2/HCl<br>Cl              |
| 609                           | Racal                 | BE8/A                                  | PAPR, ON                            | 3                          |                           |                            |
| 611                           | Racal                 | BE8/AP3                                | PAPR, ON                            | 3                          | HRA                       | Pest                       |
| 615                           | Racal                 | BE8/AE                                 | PAPR, ON                            | 3                          |                           | SO2/HCl<br>Cl              |
| 616                           | Shoplyne              | 1106<br>10441                          | Rp,FM, ON                           | 2                          | DM                        | PLE                        |
| 617                           | Glendale              | GR-1621-50<br>GR-2021-50<br>GR-8021-50 | Rp,FM, ON                           | 2                          | HRA                       |                            |
| 618                           | Glendale              | GR-7021-50                             | Rp,FM, FF                           | 2                          | HRA                       |                            |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 621                           | Glendale              | GR-2023-50<br>GR-8023-50<br>GR-1623-50<br>GR-4023-50 | Rp, FM, ON                          | 2                          | HRA                       | SO2/HCl<br>Cl       |
| 622                           | Glendale              | GR-7023-50                                           | Rp, Fm, FF                          | 2                          | HRA                       | SO2/HCl<br>Cl       |
| 625                           | Neoterik              | NP1562-5                                             | PAPR, ON                            | 3                          |                           |                     |
| 626                           | Neoterik              | NP1562-7                                             | PAPR, ON                            | 3                          |                           | SO2/HCl<br>Cl       |
| 630                           | Racal                 | BE4/A                                                | PAPR, HH                            | 3                          |                           |                     |
| 632                           | Racal                 | BE4/AP3                                              | PAPR, HH                            | 3                          | HRA                       | Pest                |
| 636                           | Racal                 | BE4/AE                                               | PAPR, HH                            | 3                          |                           | SO2/HCl<br>Cl       |
| 637                           | Neoterik              | NP1664-5<br>NP1564-5                                 | PAPR, FF                            | 3                          |                           |                     |
| 638                           | Neoterik              | NP1664-7<br>NP1564-7                                 | PAPR, FF                            | 3                          |                           | SO2/HCl<br>Cl       |
| 647                           | Racal                 | BE3/AEP3<br>BE7/AEP3                                 | PAPR, FF                            | 2                          | HRA                       | SO2/HCl<br>Cl       |
| 648                           | Racal                 | BE8/AEP3                                             | PAPR, ON                            | 3                          | HRA                       | SO2/HCl<br>Cl       |
| 649                           | North                 | 7591S/M/L<br>7791S/M/L                               | Rp, Fm, ON                          | 2                          | DFM                       |                     |
| 650                           | North                 | 75BP91M<br>75BP91L                                   | Rp, Bm, ON                          | 2                          | DFM                       |                     |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)     | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 651                           | North                 | 7691<br>7691S          | Rp, Fm, FF                          | 2                          | DFM                       |                     |
| 655                           | North                 | 7593S/M/L<br>7793S/M/L | Rp, Fm, ON                          | 2                          | DFM                       | SO2/HCl<br>Cl       |
| 656                           | North                 | 75BP93M<br>75BP93L     | Rp, Bm, ON                          | 2                          | DFM                       | SO2/HCl<br>Cl       |
| 657                           | North                 | 7693<br>7693S          | Rp, Fm, FF                          | 2                          | DFM                       | SO2/HCl<br>Cl       |
| 661                           | Cover                 | 1694-G100              | Rp, Fm, FF                          | 2                          |                           |                     |
| 662                           | Cover                 | 1694-G100-F100         | Rp, Fm, FF                          | 2                          | DM                        |                     |
| 663                           | Cover                 | 1694-G100-F108         | Rp, Fm, FF                          | 2                          | DFM                       |                     |
| 664                           | Cover                 | 1694-G104              | Rp, Fm, FF                          | 2                          |                           | SO2/HCl<br>Cl       |
| 665                           | Cover                 | 1694-G104-F100         | Rp, Fm, FF                          | 2                          | DMZ                       | SO2/HCl<br>Cl       |
| 668                           | Cover                 | 1694-G100-F102         | Rp, Fm, FF                          | 2                          |                           | PLE                 |
| 669                           | Cover                 | 1694-G100-F104         | Rp, Fm, FF                          | 2                          | DM                        | Pest                |
| 670                           | Cover                 | 1694-G104-G208         | Rp, Fm, FF                          | 2                          | HRA                       | SO2/HCl<br>Cl       |
| 672                           | Cover                 | 1694-G100-G208         | Rp, Fm, FF                          | 2                          |                           |                     |



CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                       | Respirator<br>and Facepiece<br>Type                                                                                    | Number<br>of<br>Cartridges                                                      | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------|---------------------|
| 675                           | Binks                 | 40-411<br>40-412<br>40-413<br>40-414<br>40-415<br>40-416 | Rp, Fm, ON                                                                                                             | 2                                                                               | HA                        | PLE                 |
| 676                           | AO                    | R8151A<br>S8151A                                         | Rp, Fm, ON                                                                                                             | 1                                                                               |                           |                     |
| 677                           | AO                    | R8151AP<br>S8151AP                                       | Rp, Fm, ON                                                                                                             | 1                                                                               | DM                        | PLE                 |
| 678                           | Eastern               | 287                                                      | Rp, Fm, ON                                                                                                             | 2                                                                               | HRA                       | SO2/HCl<br>Cl       |
| 679                           | AO                    | R7070A<br>S7070A<br>R7770A<br>S7770A                     | Rp, Fm, FF                                                                                                             | 2                                                                               |                           | SO2/HCl<br>ClO2/Cl  |
| 683                           | 3M                    | 7801<br>7801C                                            | Rp, Fm, FF<br>(For 7801C Combination Type C, CF)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 |                           |                     |
| 685                           | 3M                    | 7803<br>7803C                                            | Rp, Fm, FF<br>(For 7803C Combination Type C, CF)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 |                           | Cl/HCl<br>OV        |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number                 | Approval<br>Issued to | Model<br>Number(s) | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|------------------------------------|-----------------------|--------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-                            |                       |                    |                                     |                            |                           |                     |
| 688                                | 3M                    | 7807<br>7807C      | Rp, Fm, FF                          | 2                          | DMZ                       |                     |
| (For 7807C Combination Type C, CF) |                       |                    |                                     |                            |                           |                     |
|                                    |                       |                    | Air pressure<br>(psig)              | Hose length<br>(feet)      |                           |                     |
|                                    |                       |                    | 15 - 45                             | 25 - 50                    |                           |                     |
|                                    |                       |                    | 17 - 50                             | 75 - 100                   |                           |                     |
|                                    |                       |                    | 22 - 60                             | 125 - 200                  |                           |                     |
|                                    |                       |                    | 25 - 75                             | 225 - 300                  |                           |                     |
| 690                                | 3M                    | 7809<br>7809C      | Rp, Fm, FF                          | 2                          | DMZ                       | SO2/Cl<br>HCl       |
| (For 7809C Combination Type C, CF) |                       |                    |                                     |                            |                           |                     |
|                                    |                       |                    | Air pressure<br>(psig)              | Hose length<br>(feet)      |                           |                     |
|                                    |                       |                    | 15 - 45                             | 25 - 50                    |                           |                     |
|                                    |                       |                    | 17 - 50                             | 75 - 100                   |                           |                     |
|                                    |                       |                    | 22 - 60                             | 125 - 200                  |                           |                     |
|                                    |                       |                    | 25 - 75                             | 225 - 300                  |                           |                     |
| 691                                | 3M                    | 7810<br>7810C      | Rp, Fm, FF                          | 2                          | DMZ                       | PLE                 |
| (For 7810C Combination Type C, CF) |                       |                    |                                     |                            |                           |                     |
|                                    |                       |                    | Air pressure<br>(psig)              | Hose length<br>(feet)      |                           |                     |
|                                    |                       |                    | 15 - 45                             | 25 - 50                    |                           |                     |
|                                    |                       |                    | 17 - 50                             | 75 - 100                   |                           |                     |
|                                    |                       |                    | 22 - 60                             | 125 - 200                  |                           |                     |
|                                    |                       |                    | 25 - 75                             | 225 - 300                  |                           |                     |
| 693                                | 3M                    | 7812<br>7812C      | Rp, Fm, FF                          | 2                          | HRA                       |                     |
| (For 7812C Combination Type C, CF) |                       |                    |                                     |                            |                           |                     |
|                                    |                       |                    | Air pressure<br>(psig)              | Hose length<br>(feet)      |                           |                     |
|                                    |                       |                    | 15 - 45                             | 25 - 50                    |                           |                     |
|                                    |                       |                    | 17 - 50                             | 75 - 100                   |                           |                     |
|                                    |                       |                    | 22 - 60                             | 125 - 200                  |                           |                     |
|                                    |                       |                    | 25 - 75                             | 225 - 300                  |                           |                     |

CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                            | Respirator<br>and Facepiece<br>Type                                                                                        | Number<br>of<br>Cartridges                                                      | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------|---------------------|
| 695                | 3M                    | 7814<br>7814C                                 | Rp, Fm, FF<br><br>(For 7814C Combination Type C, CF)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | HRA                       | SO2/HCl<br>Cl       |
| 717                | Willson               | 122517/R/S/SR/SS/SSS<br>S122517/R/S/SR/SS/SSS | ON, Rp, Fm                                                                                                                 | 2                                                                               | DFM                       | HCl/SO2<br>Cl       |
| 718                | Willson               | 162517<br>172517                              | FF, Rp, Fm                                                                                                                 | 2                                                                               | DFM                       | HCl/SO2<br>Cl       |
| 719                | Willson               | 152517<br>152517R<br>152517SS                 | ON, Rp, Fm                                                                                                                 | 2                                                                               | DFM                       | HCl/SO2<br>Cl       |
| 720                | Willson               | 302517/R/S/SR/SS/SSS<br>S302517/R/S/SR/SS/SSS | ON, Rp, Bm                                                                                                                 | 2                                                                               | DFM                       | HCl/SO2<br>Cl       |
| 721                | Willson               | 312517<br>322517                              | FF, Rp, Bm                                                                                                                 | 2                                                                               | DFM                       | HCl/SO2<br>Cl       |
| 722                | Willson               | 352517<br>352517R<br>352517SS                 | ON, Rp, Bm                                                                                                                 | 2                                                                               | DFM                       | HCl/SO2<br>Cl       |
| 729                | Willson               | 122117/R/S/SR/SS/SSS<br>S122117/R/S/SR/SS/SSS | ON, Rp, Fm                                                                                                                 | 2                                                                               | DFM                       | Pest/PLE            |
| 730                | Willson               | 162117<br>172117                              | FF, Rp, Fm                                                                                                                 | 2                                                                               | DFM                       | Pest/PLE            |

## CHEMICAL CARTRIDGES - ORGANIC VAPOR

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                |                                     |                            |                           |                     |
| 731                | Willson               | 152117<br>152117R<br>152117SS                  | ON, Rp, Fm                          | 2                          | DFM                       | Pest/PLE            |
| 732                | Willson               | 302117S/R/S/SR/SS/SSS<br>S302117/R/S/SR/SS/SSS | ON, Rp, Bm                          | 2                          | DFM                       | Pest/PLE            |
| 733                | Willson               | 312117<br>322117                               | FF, Rp, Bm                          | 2                          | DFM                       | Pest/PLE            |
| 734                | Willson               | 352117<br>352117R<br>352117SS                  | ON, Rp, Bm                          | 2                          | DFM                       | Pest/PLE            |

## 7. Paints, Lacquers and Enamels

### Approval

Approved as respiratory protection against (1) mists of paints, lacquers and enamels; (2) not more than 1000 parts per millions organic vapors by volume.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges and filters or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

Do not wear for protection against organic vapors with poor warning properties or those that generate high heats of reaction.

Maximum use concentrations will be lower than 1000 parts per million organic vapors where that concentration produces atmospheres immediately dangerous to life or health.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

## E. Chemical Cartridges

## 7. Paints, Lacquers and Enamels

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                                                                                |                                     |                            |                           |                     |
| 54                 | Willson               | 122115<br>S122115SS<br>122115S<br>122115SS<br>122115SR<br>S122115<br>122115R<br>S122115R<br>S122115SR<br>122115SSS<br>S122115SSS<br>S122115S                                   | Rp, Fm, ON                          | 2                          | DM                        | OV/Pest             |
| 75                 | North                 | 7531*<br>7531M<br>7731M<br>7531S<br>7731S<br>7531L<br>7731L                                                                                                                    | Rp, Fm, ON                          | 2                          |                           | OV                  |
| 75                 | Acme                  | 27*                                                                                                                                                                            | Rp, Fm, ON                          | 2                          |                           | OV                  |
| 79                 | MSA                   | 448848<br>461009                                                                                                                                                               | Rp, Fm, Bm, ON                      | 2                          | DMZ                       | OV/Pest             |
| 80                 | MSA                   | 448849<br>460853<br>462241<br>466249<br>466250<br>466251<br>466255<br>466528<br>466529<br>468015 thru 468018<br>476726 thru 476728<br>479704 thru 479712<br>479914 thru 479922 | Rp, Fm, Bm, ON                      | 2                          | DM                        | OV                  |

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                       | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 87                            | Binks                 | 40-128<br>40-141<br>40-196<br>40-197<br>40-198                                                           | Rp, Fm, ON                          | 2                          | DM                        | OV<br>40-143        |
| 90                            | Glendale              | GR1621-20*<br>GR1621-60<br>GR2021-20*<br>GR2021-60<br>GR4021-20*<br>GR4021-60<br>GR8021-20*<br>GR8021-60 | Rp, Fm, ON                          | 2                          |                           | OV                  |
| 92                            | AO                    | R8191P<br>S8191P                                                                                         | Rp, Fm, ON                          | 1                          | DM                        | OV                  |
| 93                            | AO                    | R8151P<br>S8151P                                                                                         | Rp, Fm, ON                          | 1                          | DM                        | OV                  |
| 94                            | AO                    | R4051P*<br>R5051P*<br>R6051P*                                                                            | Rp, Fm, ON                          | 2                          | DM                        | OV                  |
| 96                            | DeVilbiss             | MSP-505*<br>MSP-505-1*                                                                                   | Rp, Fm, ON                          | 2                          | DM                        | OV                  |
| 97                            | AO                    | R4091P<br>S4091P<br>R5091P<br>S5091P<br>R6091P<br>S6091P                                                 | Rp, Fm, ON                          | 2                          | DM                        | OV                  |
| 100                           | Pulmosan              | C-251*<br>10006<br>10180<br>10225<br>10267<br>11030                                                      | Rp, Fm, ON                          | 1                          |                           | OV                  |
| 100                           | Fibre Metal           | C-251*<br>10180*                                                                                         | Rp, Fm, ON                          | 1                          |                           | OV                  |

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                  | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 100                           | Shoplyne              | 10006<br>10267<br>10180<br>10225                                                                                                                    | Rp, FM, ON                          | 1                          |                           | OV                  |
| 117                           | Scott                 | 6412-0313*<br>6422-0313*<br>6411-0313*<br>6413-0313*<br>6421-0313*<br>6423-0313*<br>64-OVP<br>64E-OVP<br>64M-OVP<br>64ME-OVP<br>64S-OVP<br>64SE-OVP | Rp, Fm, ON                          | 2                          | DFMZR                     | OV/Pest             |
| 123                           | 3M                    | 8712<br>8734<br>8741<br>8751                                                                                                                        | Su, ON                              | 1                          | DM                        | OV/Pest             |
| 124                           | Cover                 | 1482-G100-F102<br>1482-S-G100-F102<br>1482-L-G100-F102<br>1585S-G100-F102<br>1585-G100-F102<br>1585L-G100-F102                                      | Rp, Fm, ON                          | 2                          |                           | OV/Pest             |
| 124                           | Eastern               | E454                                                                                                                                                | Rp, Fm, ON                          | 2                          |                           | OV                  |
| 124                           | Sellstrom             | 315-G100-F102                                                                                                                                       | Rp, Fm, ON                          | 2                          |                           | OV                  |
| 124                           | Safe-Tex              | 236-G100-F102*                                                                                                                                      | Rp, Fm, ON                          | 2                          |                           | OV                  |
| 125                           | US Safety             | 150T24                                                                                                                                              | Rp, Fm, ON                          | 2                          |                           | OV                  |
| 126                           | Cesco                 | 95RC35                                                                                                                                              | Rp, Fm, ON                          | 2                          |                           | OV                  |



CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                       | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 127                           | Stewart-<br>Warner    | 7931*                                                    | Rp, Fm, ON                          | 2                          |                           | OV                  |
| 128                           | Northcott             | 70-450*                                                  | Rp, Fm, ON                          | 2                          |                           | OV                  |
| 133                           | Willson               | 162115<br>172115                                         | Rp, Fm, FF                          | 2                          | DM                        | OV/Pest             |
| 149                           | MSA                   | 461846<br>466256<br>466257<br>471726<br>471727           | Rp, Fm, FF                          | 2                          | DM                        | Pest                |
| 155                           | MSA                   | 461853                                                   | Rp, Fm, FF                          | 2                          | HA                        | OV/Pest             |
| 161                           | MSA                   | 460846<br>461012                                         | Rp, Fm, Bm, ON                      | 2                          | HA                        | OV/Pest             |
| 175                           | North                 | 75BP31*<br>75BP31M<br>75BP31L                            | Rp, Bm, ON                          | 2                          |                           | OV                  |
| 188                           | North                 | 7631<br>7631S<br>7631N*<br>7631SN*                       | Rp, Fm, FF                          | 2                          |                           | OV                  |
| 201                           | MSA                   | 465986<br>466239<br>466240<br>466241<br>466526<br>466527 | Rp, Fm, ON                          | 2                          | DM                        | OV                  |

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 204                           | North                 | 7581M<br>7781M<br>7581S<br>7781S<br>7581L<br>7781L<br>7581*                                                                                  | Rp, Fm, ON                          | 2                          | HRA                       | OV                  |
| 205                           | North                 | 75BP81*<br>75BP81M<br>75BP81L                                                                                                                | Rp, Bm, ON                          | 2                          | HRA                       | OV                  |
| 206                           | North                 | 7681<br>7681S                                                                                                                                | Rp, Fm, FF                          | 2                          | HRA                       | OV                  |
| 224                           | Scott                 | 6470-0313*<br>6480-0313*<br>65-OV-P<br>65S-OV-P                                                                                              | Rp, Fm, FF                          | 2                          | DFMZR                     | OV/Pest             |
| 239                           | AO                    | R7051P*                                                                                                                                      | Rp, Fm, FF                          | 2                          |                           | OV                  |
| 240                           | AO                    | R7091P<br>S7091P                                                                                                                             | Rp, Fm, FF                          | 2                          | DM                        | OV                  |
| 258                           | Willson               | 122116<br>S122116<br>122116S<br>S122116R<br>122116SR<br>S122116S<br>S122116SS<br>S122116SSS<br>122116SSS<br>S122116SR<br>122116R<br>122116SS | Rp, Fm, ON                          | 2                          | DM                        | OV                  |
| 259                           | Willson               | 162116<br>172116                                                                                                                             | Rp, Fm, FF                          | 2                          | DM                        | OV                  |

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 271                           | Cesco                 | 96RC35*                                                                              | Rp, Fm, FF                          | 2                          |                           | OV                  |
| 272                           | US Safety             | 151T24*                                                                              | Rp, Fm, FF                          | 2                          |                           | OV                  |
| 278                           | DeVilbiss             | MSP-506                                                                              | Rp, Fm, ON                          | 1                          | DM                        | OV                  |
| 285                           | MSA                   | 468023<br>468024<br>468025<br>471728<br>471729                                       | Rp, FM, FF                          | 2                          | DM                        | OV                  |
| 286                           | MSA                   | 468026<br>468027<br>468028<br>468029<br>468030<br>468031                             | Rp, BM, ON                          | 2                          | DM                        | OV                  |
| 321                           | USD                   | 2221-00<br>2121-00<br>2321-00                                                        | Rp, FM, ON                          | 2                          | DM                        | OV                  |
| 333                           | AO                    | R4051AP<br>S4051AP<br>R5051AP<br>S5051AP<br>R6051AP<br>S6051AP<br>R5551AP<br>S5551AP | Rp, FM, ON                          | 2                          | DM                        | OV                  |
| 334                           | AO                    | R7051AP<br>S7051AP<br>R7751AP<br>S7751AP                                             | Rp, FM, FF                          | 2                          | DM                        | OV                  |
| 335                           | DeVilbiss             | MSP-508<br>MSP-9508                                                                  | Rp, FM, ON                          | 2                          | DM                        | OV                  |

## CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 336                           | US Safety             | 150T35<br>150L35                                                                                                                             | Rp,Fm,ON                            | 2                          | DFMR                      | OV/Pest             |
| 337                           | Cesco                 | 95RC115<br>95SMRC115                                                                                                                         | Rp,Fm,ON                            | 2                          | DFMR                      | OV/Pest             |
| 338                           | US Safety             | 151T35                                                                                                                                       | Rp,Fm,FF                            | 2                          | DFMR                      | OV/Pest             |
| 348                           | Cesco                 | 96RC115                                                                                                                                      | Rp,Fm,FF                            | 2                          | DFM                       | OV/Pest             |
| 354                           | North                 | 10041S<br>10041M                                                                                                                             | Su,ON                               | 1                          | DM                        | OV/Pest             |
| 373                           | Stewart<br>Warner     | 7931+                                                                                                                                        | Rp, Fm,ON                           | 2                          | DFMR                      | OV/Pest             |
| 374                           | Willson               | 302115<br>302115R<br>302115S<br>302115SR<br>302115SS<br>302115SSS<br>S302115<br>S302115R<br>S302115S<br>S302115SR<br>S302115SS<br>S302115SSS | Rp, Bm,ON                           | 2                          | DM                        | OV/Pest             |
| 375                           | Willson               | 312115<br>322115                                                                                                                             | Rp, Bm,FF                           | 2                          | DM                        | OV/Pest             |

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 376                           | Willson               | 302116<br>302116R<br>302116S<br>302116SR<br>302116SS<br>302116SSS<br>S302116<br>S302116R<br>S302116S<br>S302116SR<br>S302116SS<br>S302116SSS | Rp, Bm,ON                           | 2                          | DM                        | OV                  |
| 377                           | Willson               | 312116<br>322116                                                                                                                             | Rp, Bm,FF                           | 2                          | DM                        | OV                  |
| 392                           | Northcott             | 70-450+                                                                                                                                      | Rp, Fm, ON                          | 2                          | DFMR                      | OV/Pest             |
| 406                           | Glendale              | GR7021-20<br>GR7021-60                                                                                                                       | Rp, Fm, FF                          | 2                          |                           | OV                  |
| 413                           | AO                    | R4051HE<br>S4051HE<br>R5051HE<br>S5051HE<br>R6051HE<br>S6051HE<br>R5551HE<br>S5551HE                                                         | Rp, Fm, ON                          | 2                          | HRA                       | OV/Pest             |
| 414                           | AO                    | R7051HE<br>S7051HE                                                                                                                           | Rp, Fm, FF                          | 2                          | HRA                       | OV/Pest             |
| 426                           | AO                    | R4051EP<br>R5051EP<br>R6051EP                                                                                                                | Rp, Fm, ON                          | 2                          | DMZ                       | OV                  |
| 427                           | AO                    | R7051EP                                                                                                                                      | Rp, Fm, FF                          | 2                          | DMZ                       | OV                  |
| 428                           | DeVilbiss             | MSL-500                                                                                                                                      | Rp, Fm, ON                          | 2                          | DMZ                       | OV                  |

## CHEMICAL CARTRIDGES -- PAINTS, LACQUERS, ENAMELS

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 436                           | 3M                    | 7210                                                                                 | Rp,Fm,ON                            | 2                          | DMZ                       | OV                  |
| 455                           | USD                   | 3221-00                                                                              | Rp,Fm,FF                            | 2                          | DM                        | OV                  |
| 465                           | MSA                   | 472755                                                                               | Rp,Bm,ON                            | 2                          | HA                        | OV/Pest             |
| 473                           | MSA                   | 472736<br>472737<br>472738<br>479926 thru 479931                                     | Rp,Bm,ON                            | 2                          | DM                        | OV                  |
| 474                           | MSA                   | 472739<br>472740<br>472741<br>480055 thru 480063                                     | Rp,Bm,ON                            | 2                          | DM                        | OV                  |
| 490                           | AO                    | R4091AP<br>S4091AP<br>R5091AP<br>S5091AP<br>R6091AP<br>S6091AP<br>R5591AP<br>S5591AP | Rp,FM,ON                            | 2                          | DM                        | OV                  |
| 491                           | AO                    | R7091AP<br>S7091AP<br>R7791AP<br>S7791AP                                             | Rp,FM,FF                            | 2                          | DM                        | OV                  |
| 494                           | Pulmosan              | 10405                                                                                | Rp,FM,FF                            | 1                          |                           | OV                  |
| 510                           | MSA                   | 470200                                                                               | Rp,FM,ON                            | 1                          | DM                        | OV                  |
| 523                           | Scott                 | 64-OV-H<br>64E-OV-H<br>64M-OV-H<br>64ME-OV-H<br>64S-OV-H<br>64SE-OV-H                | Rp,FM,ON                            | 2                          | HRA                       | OV/Pest             |

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                       | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 524                           | Scott                 | 65-OV-H<br>65S-OV-H                                      | Rp,FM,FF                            | 2                          | HRA                       | OV/Pest             |
| 554                           | Pulmosan              | 10438<br>10441<br>11060                                  | Rp,Fm,ON                            | 2                          | DM                        | OV                  |
| 571                           | Willson               | 152115<br>152115R<br>152115SS                            | Rp,FM,ON                            | 2                          | DM                        | OV/Pest             |
| 572                           | Willson               | 352115<br>352115R<br>352115SS                            | Rp,FM,ON                            | 2                          | DM                        | OV/Pest             |
| 573                           | Willson               | 152116<br>152116R<br>152116SS                            | Rp,FM,ON                            | 2                          | DM                        | OV                  |
| 574                           | Willson               | 352116<br>352116R<br>352116SS                            | Rp,FM,ON                            | 2                          | DM                        | OV                  |
| 616                           | Shoplyne              | 11060<br>10441                                           | Rp,FM,ON                            | 2                          | DM                        | OV                  |
| 668                           | Cover                 | 1694-G100-F102                                           | Rp,Fm,FF                            | 2                          |                           | OV                  |
| 675                           | Binks                 | 40-411<br>40-412<br>40-413<br>40-414<br>40-415<br>40-416 | Rp,Fm,ON                            | 2                          | HA                        | OV                  |
| 677                           | AO                    | R8151AP<br>S8151AP                                       | Rp, Fm,ON                           | 1                          | DM                        | OV                  |

CHEMICAL CARTRIDGES - PAINTS, LACQUERS, ENAMELS

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                          | Respirator<br>and Facepiece<br>Type                                                                                                        | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------|---------------------|
| 691                           | 3M                    | 7810<br>7810C                               | Rp, Fm, FF<br><br>(For 7810C Combination Type C, continuous<br>flow)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2                          | DMZ                       | OV                  |
|                               |                       |                                             | Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300                                                                     |                            |                           |                     |
| 729                           | Willson               | 122117R/S/SR/SS/SSS<br>S122117/S/SR/SS/SSS  | ON, Rp, Fm                                                                                                                                 | 2                          | DFM                       | Pest/OV             |
| 730                           | Willson               | 162117<br>172117                            | FF, Rp, Fm                                                                                                                                 | 2                          | DFM                       | Pest/OV             |
| 731                           | Willson               | 152117<br>152117R<br>152117SS               | ON, Rp, Fm                                                                                                                                 | 2                          | DFM                       | Pest/OV             |
| 732                           | Willson               | 302117R/S/SR/SS/SSS<br>S302117R/S/SR/SS/SSS | ON, Rp, Bm                                                                                                                                 | 2                          | DFM                       | Pest/OV             |
| 733                           | Willson               | 312117<br>322117                            | FF, Rp, Bm                                                                                                                                 | 2                          | DFM                       | Pest/OV             |
| 734                           | Willson               | 352117<br>352117R<br>352117SS               | ON, Rp, Bm                                                                                                                                 | 2                          | DFM                       | Pest/OV             |



## 8. Pesticides

### Approval

Approved as respiratory protection against pesticides.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

Do not wear for protection against organic vapors with poor warning properties or those that generate high heats of reaction.

Maximum use concentrations will be lower than 1000 parts per million organic vapors where that concentration produces atmospheres immediately dangerous to life or health.

Not approved for fumigants.

Refer to pesticide label for limitations on respirator use.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

E. Chemical Cartridges  
8. Pesticides

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                       | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 54                            | Willson               | 122115<br>S122115SS<br>122115S<br>122115SS<br>122115SR<br>S122115<br>122115R<br>S122115R<br>S122115SR<br>122115SSS<br>S122115SSS<br>S122115S             | Rp,Fm, ON                           | 2                          | DM                        | OV/PLE              |
| 74                            | North                 | 7549*<br>7549M<br>7749M<br>7549S<br>7749S<br>7549L<br>7749L                                                                                              | Rp,Fm, ON                           | 2                          |                           | OV                  |
| 78                            | 3M                    | W-262-12<br>W-262-24*<br>W-263-12-L/M/S*<br>W-264-12<br>W-279-12<br>W-279-24*<br>W-291-12<br>W-291-24*<br>W-296-12<br>W-296-24*<br>W-351-12<br>W-351-24* | PAPR, HH                            | 1                          |                           |                     |
| 79                            | MSA                   | 461009<br>448848                                                                                                                                         | Rp,Fm,Bm<br>ON                      | 2                          | DM                        | PLE/OV              |

CHEMICAL CARTRIDGES - PESTICIDES

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                  | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM   | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|-----------------------------|---------------------|
| TC-23C-            |                       |                                                                                                                                                     |                                     |                            |                             |                     |
| 106                | AO                    | R4058<br>S4058<br>R5058<br>S5058<br>R6058<br>S6058                                                                                                  | Rp,Fm, ON                           | 2                          | DFM                         | OV                  |
| 110                | Pulmosan              | C-241*<br>10264<br>10177<br>10228<br>10003<br>11051                                                                                                 | Rp,Fm, ON                           | 1                          |                             |                     |
| 110                | Fibre Metal           | C-241*<br>10177*<br>10228*<br>10003*<br>10264*                                                                                                      | Rp,Fm, ON                           | 1                          |                             |                     |
| 110                | Shoplyne              | 10003<br>10177<br>10228<br>10264                                                                                                                    | Rp,FM, ON                           | 1                          |                             |                     |
| 117                | Scott                 | 6412-0313*<br>6422-0313*<br>6411-0313*<br>6413-0313*<br>6421-0313*<br>6423-0313*<br>64-OVP<br>64E-OVP<br>64M-OVP<br>64ME-OVP<br>64S-OVP<br>64SE-OVP | Rp,Fm, ON                           | 2                          | DFMZR                       | OV/PLE              |
| 123                | 3M                    | 8712<br>8734<br>8741<br>8751                                                                                                                        | Su, ON                              | 1                          | DM<br>8734, 8712, 8741 only | OV/PLE              |

## CHEMICAL CARTRIDGES - PESTICIDES

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 133                           | Willson               | 162115<br>172115                                                                                               | Rp,Fm, FF                           | 2                          | DM                        | OV/PLE              |
| 148                           | MSA                   | 461858                                                                                                         | Rp,Fm, FF                           | 2                          |                           |                     |
| 161                           | MSA                   | 460846<br>461012                                                                                               | Rp,Fm,Bm, ON                        | 2                          | HA                        | OV/PLE              |
| 178                           | North                 | 75BP49*<br>75BP49M<br>75BP49L                                                                                  | Rp,Bm, ON                           | 2                          |                           | OV                  |
| 190                           | North                 | 7649<br>7649S<br>7649N*<br>7649SN*                                                                             | Rp,Fm, FF                           | 2                          |                           | OV                  |
| 197                           | Glendale              | GR-1625<br>GR-2025<br>GR-4025<br>GR-8025                                                                       | Rp,Fm, ON                           | 2                          |                           |                     |
| 198                           | US Safety             | 150T30*                                                                                                        | Fm, ON                              | 2                          |                           | OV                  |
| 199                           | Cesco                 | 95RC125*                                                                                                       | Fm, ON                              | 2                          |                           | OV                  |
| 202                           | Cover                 | 1482-G100-F104<br>1482-S-G100-F104<br>1482-L-G100-F104<br>1585S-G100-F104<br>1585-G100-F104<br>1585L-G100-F104 | Rp,Fm, ON                           | 2                          | DM                        | OV                  |
| 202                           | Eastern               | E455                                                                                                           | Rp,Fm, ON                           | 2                          | DM                        | OV                  |
| 202                           | Sellstrom             | 315-G100-F104                                                                                                  | Rp,Fm, ON                           | 2                          | DM                        | OV                  |

## CHEMICAL CARTRIDGES - PESTICIDES

| Approval<br>Number<br>TC-23C-- | Approval<br>Issued to | Model<br>Number(s)                                 | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor   |
|--------------------------------|-----------------------|----------------------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------|
| 224                            | Scott                 | 6470-0313*<br>6480-0313*<br>65-OVP<br>65S-OVP      | Rp, Fm, FF                          | 2                          | DFMZR                     | OV/PLE                |
| 238                            | AO                    | R7058<br>S7058                                     | Rp, Fm, FF                          | 2                          | DMF                       | OV                    |
| 273                            | Cesco                 | 96RC125*                                           | Rp, Fm, FF                          | 2                          |                           |                       |
| 274                            | US Safety             | 151T30*                                            | Rp, Fm, FF                          | 2                          |                           |                       |
| 281                            | AO                    | R4563<br>S4563<br>R5563<br>S5563<br>R6563<br>S6563 | Rp, Fm, ON                          | 2                          | DFM                       | SO2/HCl/OV<br>Cl/ClO2 |
| 282                            | AO                    | R7563<br>S7563                                     | Rp, Fm, FF                          | 2                          | DFM                       | SO2/HCl/Cl<br>OV/ClO2 |
| 323                            | USD                   | 2131-00*<br>2231-00*<br>2331-00*                   | Rp, FM, ON                          | 2                          | DFMR                      | OV                    |
| 336                            | US Safety             | 150T35<br>150L35                                   | Rp, Fm, ON                          | 2                          | DFMR                      | OV/PLE                |
| 337                            | Cesco                 | 95RC115<br>95SMRC115                               | Rp, Fm, ON                          | 2                          | DFMR                      | OV/PLE                |
| 338                            | US Safety             | 151T35                                             | Rp, Fm, FF                          | 2                          | DFMR                      | OV/PLE                |
| 348                            | Cesco                 | 96RC115                                            | Rp, Fm, FF                          | 2                          | DFM                       | OV/PLE                |

## CHEMICAL CARTRIDGES - PESTICIDES

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                           | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor       |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------------|
| 354                           | North                 | 10041S<br>10041M                                                                                                                             | Su, ON                              | 1                          | DM                        | OV/PLE                    |
| 373                           | Stewart<br>Warner     | 7931+                                                                                                                                        | Rp, Fm, ON                          | 2                          | DFMR                      | OV/PLE                    |
| 374                           | Willson               | 302115<br>302115R<br>302115S<br>302115SR<br>302115SS<br>302115SSS<br>S302115<br>S302115R<br>S302115S<br>S302115SR<br>S302115SS<br>S302115SSS | Rp, Bm, ON                          | 2                          | DM                        | OV/PLE                    |
| 375                           | Willson               | 312115<br>322115                                                                                                                             | Rp, Bm, FF                          | 2                          | DM                        | OV/PLE                    |
| 392                           | Northcott             | 70-450+                                                                                                                                      | Rp, Fm, ON                          | 2                          | DFMR                      | OV/PLE                    |
| 409                           | Glendale              | GR7025                                                                                                                                       | Rp, Fm, FF                          | 2                          |                           |                           |
| 413                           | AO                    | R4051HE<br>S4051HE<br>R5051HE<br>S5051HE<br>R6051HE<br>S6051HE<br>R5551HE<br>S5551HE                                                         | Rp, Fm, ON                          | 2                          | HRA                       | PLE/OV                    |
| 414                           | AO                    | R/S7051HE<br>R/S7751HE                                                                                                                       | Rp, Fm, FF                          | 2                          | HRA                       | PLE/OV                    |
| 417                           | AO                    | R/S4053HE<br>R/S5053HE<br>R/S6053HE<br>R/S5553HE                                                                                             | Rp, Fm, ON                          | 2                          | HRA                       | OV/CL02/<br>Cl/HCl<br>SO2 |

## CHEMICAL CARTRIDGES - PESTICIDES

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                    | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 418                           | AO                    | R/S7053HE<br>R/S7753HE                                                | Rp, Fm, FF                          | 2                          | HRA                       | OV/CL02/<br>CL2/HCl |
| 439                           | 3M                    | 7205                                                                  | Rp, Fm, ON                          | 2                          |                           |                     |
| 456                           | USD                   | 3231-00*                                                              | Rp, Fm, FF                          | 2                          | DFMR                      | OV                  |
| 464                           | MSA                   | 472752                                                                | Rp, Bm, ON                          | 2                          | DM                        | OV                  |
| 465                           | MSA                   | 472755                                                                | Rp, Bm, ON                          | 2                          | HA                        | OV/PLE              |
| 482                           | Racal                 | BE 1/A-P3                                                             | PAPR, HH                            | 3                          | HRA                       | OV                  |
| 483                           | Racal                 | BE 3/A-P3<br>BE 7/A-P3                                                | PAPR, FF                            | 3                          | HRA                       | OV                  |
| 484                           | Racal                 | BE 5/A-P3                                                             | PAPR, HH                            | 3                          | HRA                       | OV                  |
| 485                           | Racal                 | BE 6/A-P3                                                             | PAPR, HH                            | 3                          | HRA                       | OV                  |
| 493                           | Pulmosan              | 10402                                                                 | Rp, FM, FF                          | 1                          |                           |                     |
| 523                           | Scott                 | 64-OV-H<br>64E-OV-H<br>64M-OV-H<br>64ME-OV-H<br>64S-OV-H<br>64SE-OV-H | Rp, FM, ON                          | 2                          | HRA                       | OV/PLE              |
| 524                           | Scott                 | 65-OV H<br>65S-OV-H                                                   | Rp, FM, FF                          | 2                          | HRA                       | OV/PLE              |
| 530                           | USD                   | 2141-00<br>2241-00<br>2341-00                                         | Rp, FM, ON                          | 2                          | DFMR                      | OV                  |

## CHEMICAL CARTRIDGES - PESTICIDES

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 531                           | USD                   | 3241-00                                                                        | Rp,FM, FF                           | 2                          | DFMR                      | OV                  |
| 546                           | Safety<br>Supply      | F-160-PT<br>F-200-PT<br>F-800-PT                                               | Rp,FM, ON                           | 2                          |                           |                     |
| 547                           | Safety<br>Supply      | F-700-PT                                                                       | Rp,FM, FF                           | 2                          |                           |                     |
| 571                           | Willson               | 152115<br>152115R<br>152115SS                                                  | Rp,FM, ON                           | 2                          | DM                        | OV/PLE              |
| 572                           | Willson               | 352115<br>352115R<br>352115SS                                                  | Rp,FM, ON                           | 2                          | DM                        | OV/PLE              |
| 585                           | AO                    | R4058A<br>S4058A<br>R5058A<br>S5058A<br>R6058A<br>S6058A<br>R5558A<br>S5558A   | Rp,FM, ON                           | 2                          | DFM                       | OV                  |
| 586                           | AO                    | R7058A<br>S7058A<br>R7758A<br>S7758A                                           | Rp,FM, ON                           | 2                          | DFM                       | OV                  |
| 587                           | AO                    | R4563A<br>S4563A<br>R5563A<br>S5563A<br>R6563A<br>S6563A<br>R55563A<br>S55563A | Rp,FM, ON                           | 2                          | DFM                       | SO2/HCl/Cl<br>OV    |



CHEMICAL CARTRIDGES - PESTICIDES

| Approval<br>Number<br>TC-23C-- | Approval<br>Issued to | Model<br>Number(s)                           | Respirator<br>and Facepiece<br>Type                                                                                        | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------------------|-----------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------|---------------------|
| 588                            | AO                    | R7563A<br>S7563A<br>R77563A<br>S77563A       | Rp, FM, FF                                                                                                                 | 2                          | DFM                       | SO2/HCl/Cl<br>OV    |
| 602                            | Racal                 | BE17/AP3                                     | PAPR, HH                                                                                                                   | 3                          | HRA                       | OV                  |
| 611                            | Racal                 | BE8/AP3                                      | PAPR, ON                                                                                                                   | 3                          | HRA                       | OV                  |
| 632                            | Racal                 | BE4/AP3                                      | PAPR, HH                                                                                                                   | 3                          | HRA                       | OV                  |
| 669                            | Cover                 | 1694-G100-F104                               | Rp, Fm, FF                                                                                                                 | 2                          | DM                        | OV                  |
| 682                            | Kasco                 | K80S-T4                                      | PAPR, HH                                                                                                                   | 3                          |                           |                     |
| 687                            | 3M                    | 7805<br>7805C                                | Rp, Fm, FF<br><br>(For 7805C Combination Type C, CF)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2                          |                           |                     |
|                                |                       |                                              | Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300                                                     |                            |                           |                     |
| 729                            | Willson               | 122117R/S/SR/SS/SSS<br>S122117/R/S/SR/SS/SSS | ON, Rp, Fm                                                                                                                 | 2                          | DFM                       | PLE/OV              |
| 730                            | Willson               | 162117<br>172117                             | FF, Rp, Fm                                                                                                                 | 2                          | DFM                       | PLE/OV              |
| 731                            | Willson               | 152117<br>152117R<br>152117SS                | ON, Rp, Fm                                                                                                                 | 2                          | DFM                       | PLE/OV              |

CHEMICAL CARTRIDGES - PESTICIDES

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                                               |                                     |                            |                           |                     |
| 732                | Willson               | 302117/R/S/SR/SS/SSS<br>S302117/R/S/SR/SS/SSS | ON, Rp, Bm                          | 2                          | DFM                       | PLE/OV              |
| 733                | Willson               | 312117<br>322117                              | FF, Rp, Bm                          | 2                          | DFM                       | PLE/OV              |
| 734                | Willson               | 352117<br>352117R<br>352117SS                 | ON, Rp, Bm                          | 2                          | DFM                       | PLE/OV              |

## 9. Vinyl Chloride

### Approval

Approved as respiratory protection against 10 parts per million vinyl chloride or until indicator change.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be carefully fitted to the wearer's face before use, in accordance with the manufacturer's facepiece fitting instructions.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

E. Chemical Cartridges  
9. Vinyl Chloride

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s) | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 200                           | 3M                    | 8716               | Su, ON                              | 1                          |                           |                     |

## 10. Other Gases and Vapors

### Approval

See approval labels for approved maximum use concentration and for specific limitations.

### Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges or for discarding disposable respirators.

Approval may include protection against particulates or other gases and vapors. The type of additional approval is listed in the last two columns. See page 10 for definitions of particulate types and approved use concentrations on gases and vapors.

This respirator shall be carefully fitted to the wearer's face before use, in accordance with the manufacturer's facepiece fitting instructions.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

## CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - MERCURY

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s) | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 629                           | MSA                   | 472959             | Rp, BM, ON                          | 2                          |                           | Cl                  |

## CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - HYDROGEN SULFIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)         | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 492                           | Scott                 | 70-AG                      | ES, MP                              | 1                          |                           | Cl/HCl              |
| 514                           | MSA                   | 471914<br>476337<br>476338 | ES, MP                              | 1                          | DM                        | SO2/HCl/Cl          |

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - CHLORINE DIOXIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 343                | AO                    | R4053A<br>S4053A<br>R5053A<br>S5053A<br>R6053A<br>S6053A<br>R5553A<br>S5553A         | Rp, Fm, ON                          | 2                          |                           | OV/SO2/HCl<br>Cl    |
| 344                | AO                    | R7053A<br>S7053A<br>R7753A<br>S7753A                                                 | Rp, Bm, FF                          | 2                          |                           | OV/SO2/HCl<br>Cl    |
| 345                | AO                    | R4053AD<br>S4053AD<br>R5053AD<br>S5053AD<br>R6053AD<br>S6053AD<br>R5553AD<br>S5553AD | Rp, Fm, ON                          | 2                          | DM                        | OV/SO2/HCl<br>Cl    |
| 346                | AO                    | R7053AD<br>S7053AD<br>R7753AD<br>S7753AD                                             | Rp, Fm, FF                          | 2                          | DM                        | OV/SO2/HCl<br>Cl    |
| 417                | AO                    | R4053HE<br>S4054HE<br>R5053HE<br>S5053HE<br>R6053HE<br>S6053HE<br>R5553HE<br>S5553HE | Rp, Fm, ON                          | 2                          | HRA                       | OV/SO2/HCl<br>Cl    |
| 418                | AO                    | R7053HE<br>S7053HE<br>R7753HE<br>S7753HE                                             | Rp, Fm, FF                          | 2                          | HRA                       | OV/SO2/HCl<br>Cl    |

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - CHLORINE DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                             | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor   |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------|
| 587                           | AO                    | R4563A<br>S4563A<br>R5563A<br>S5563A<br>R6563A<br>S6563A<br>R55563A<br>S55563A | Rp,FM,ON                            | 2                          | DFM                       | OV/SO2/HCl<br>Cl/pest |
| 588                           | AO                    | R7563A<br>S7563A<br>R77563A<br>S77563A                                         | Rp,FM,FF                            | 2                          | DFM                       | OV/SO2/HCl<br>Cl/pest |
| 679                           | AO                    | R7070A<br>S7070A<br>R7770A<br>S7770A                                           | Rp,Fm,FF                            | 2                          |                           | OV/SO2/HCl<br>Cl      |



CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 41                            | MSA                   | 459434<br>461006                                                                                                                                          | Rp, Fm, Bm, ON                      | 2                          | DM                        | SO2/Cl/HCl          |
| 47                            | MSA                   | 459435<br>461007                                                                                                                                          | Rp, Fm, Bm, ON                      | 2                          | DM                        | OV/SO2/HCl<br>Cl    |
| 115                           | Scott                 | 6411-0001*<br>6412-0001*<br>6413-0001*<br>6421-0001*<br>6422-0001*<br>6423-0001*<br>64-AG<br>64E-AG<br>64M-AG<br>64ME-AG<br>64S-AG<br>64SE-AG             | Rp, Fm, ON                          | 2                          |                           | SO2/HCl/Cl          |
| 116                           | Scott                 | 6411-0101*<br>6413-0101*<br>6421-0101*<br>6423-0101*<br>6412-0101*<br>6422-0101*<br>64-AG-D<br>64E-AG-D<br>64M-AG-D<br>64ME-AG-D<br>64S-AG-D<br>64SE-AG-D | Rp, Fm, ON                          | 2                          | DMZ                       | SO2/HCl/Cl          |
| 145                           | MSA                   | 461849                                                                                                                                                    | Rp, Fm, FF                          | 2                          | DM                        | SO2/HCl/Cl          |
| 146                           | MSA                   | 461850                                                                                                                                                    | Rp, Fm, FF                          | 2                          | DM                        | OV/SO2/HCl<br>/Cl   |
| 150                           | MSA                   | 461854                                                                                                                                                    | Rp, Fm, FF                          | 2                          | HA                        | SO2/HCl/Cl          |
| 153                           | MSA                   | 461855                                                                                                                                                    | Rp, Fm, FF                          | 2                          | HA                        | OV/SO2/HCl<br>Cl    |

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                      | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 154                           | MSA                   | 461856                                                                                                                                                                  | Rp, Fm, FF                          | 2                          | DFMR                      | OV/SO2/HCl<br>Cl    |
| 156                           | MSA                   | 461835<br>462239                                                                                                                                                        | Rp, Fm, Bm, ON                      | 2                          | HA                        | SO2/HCl/Cl          |
| 159                           | MSA                   | 460847<br>461013                                                                                                                                                        | Rp, Fm, Bm, ON                      | 2                          | HA                        | OV/SO2/HCl<br>Cl    |
| 160                           | MSA                   | 460848<br>461014                                                                                                                                                        | Rp, Fm, Bm, ON                      | 2                          | DFMR                      | OV/SO2/HCl<br>Cl    |
| 172                           | Scott                 | 6411-0015*<br>64-OA<br>6413-0015*<br>64E-OA<br>6421-0015*<br>64M-OA<br>6423-0015*<br>64ME-OA<br>6412-0015*<br>64S-OA<br>6422-0015*<br>64SE-OA                           | Fm, ON                              | 2                          |                           | OV/SO2/HCl<br>Cl    |
| 174                           | Scott                 | 6411-0115*<br>6412-0115*<br>6413-0115*<br>6421-0115*<br>6422-0115*<br>6423-0115*<br>64-OA-D<br>64E-OA-D<br>64M-OA-D<br>64ME-OA-D<br>64S-OA-D<br>64SE-OA-D<br>604032-15* | Fm, ON                              | 2                          | DMZ                       | OV/SO2/HCl<br>Cl    |

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                          | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 207                           | North                 | 7582S<br>7582M<br>7582L<br>7782S<br>7782M<br>7782L          | Rp, ON, Fm                          | 2                          | HRA                       | HC1/C1/SO2          |
| 208                           | North                 | 75BP82M<br>75BP82L                                          | Rp, Bm, ON                          | 2                          | HRA                       | HC1/C1/SO2          |
| 209                           | North                 | 7682<br>7682S                                               | Rp, Fm, FF                          | 2                          | HRA                       | HC1/C1/SO2          |
| 218                           | Scott                 | 6470-0101*<br>6480-0101*<br>65-AG-D<br>65S-AG-D             | Rp, Fm, FF                          | 2                          | DMZ                       | SO2/HC1/C1          |
| 221                           | Scott                 | 6470-0015*<br>6480-0015*<br>65-OA<br>65S-OA                 | Rp, Fm, FF                          | 2                          |                           | OV/SO2/HC1<br>C1    |
| 222                           | Scott                 | 6470-0115*<br>6480-0115*<br>65-OA-D<br>65S-OA-D             | Rp, Fm, FF                          | 2                          | DMZ                       | OV/SO2/HC1<br>C1    |
| 225                           | Scott                 | 6470-0001<br>6480-0001<br>65-AG<br>65S-AG                   | Rp, Fm, FF                          | 2                          |                           | SO2/HC1/C1          |
| 226                           | North                 | 7502*<br>7502S<br>7702S<br>7502M<br>7702L<br>7502L<br>7702M | Rp, Fm, ON                          | 2                          |                           | SO2/HC1/C1          |

## CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 227                           | North                 | 75BP02*<br>75BP02M<br>75BP02L                                                                                                                             | Rp, Bm, ON                          | 2                          |                           | SO2/HCl/Cl          |
| 228                           | North                 | 7602<br>7602S<br>7602N*<br>7602SN*                                                                                                                        | Rp, Fm, FF                          | 2                          |                           | SO2/HCl/Cl          |
| 229                           | North                 | 7512*<br>7512S<br>7512M<br>7512L<br>7712S<br>7712M<br>7712L                                                                                               | Rp, Fm, ON                          | 2                          | DM                        | SO2/HCl/Cl          |
| 230                           | North                 | 75BP12*<br>75BP12M<br>75BP12L                                                                                                                             | Rp, Bm, ON                          | 2                          | DM                        | SO2/HCl/Cl          |
| 231                           | North                 | 7612<br>7612S<br>7612N*<br>7612SN*                                                                                                                        | Rp, Fm, FF                          | 2                          | DM                        | SO2/HCl/Cl          |
| 246                           | Scott                 | 6411-0301*<br>64-AG-F<br>6413-0301*<br>64E-AG-F<br>6421-0301*<br>64M-AG-F<br>6423-0301*<br>64ME-AG-F<br>6412-0301*<br>64S-AG-F<br>6422-0301*<br>64SE-AG-F | Rp, Fm, ON                          | 2                          | DFMZR                     | SO2/HCl/Cl          |
| 247                           | Scott                 | 6470-0301*<br>6480-0301*<br>65-AG-F<br>65S-AG-F                                                                                                           | Rp, Fm, FF                          | 2                          | DFMZR                     | SO2/HCl/Cl          |

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                        | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 250                | Scott                 | 6411-0315*<br>64-OA-F<br>6413-0315*<br>64M-OA-F<br>6421-0315*<br>64ME-OA-F<br>6423-0315*<br>64E-OA-F<br>6412-0315*<br>64S-OA-F<br>6422-0315*<br>64SE-OA-F | Rp,Fm, ON                           | 2                          | DFMZR                     | OV/SO2/HCl<br>Cl    |
| 251                | Scott                 | 6470-0315*<br>6480-0315*<br>65-OA-F<br>65S-OA-F                                                                                                           | Rp,Fm, FF                           | 2                          | DFMZR                     | OV/SO2/HCl<br>Cl    |
| 260                | MSA                   | 466903                                                                                                                                                    | Rp,Fm, ON                           | 2                          | DM                        | OV/SO2/HCl<br>Cl    |
| 261                | MSA                   | 466902                                                                                                                                                    | Rp,Bm, ON                           | 2                          | DM                        | OV/SO2/HCl<br>Cl    |
| 318                | USD                   | 2203-00<br>2103-00<br>2303-00                                                                                                                             | Rp, FM, ON                          | 2                          |                           | OV/SO2/HCl<br>Cl    |
| 372                | 3M                    | 8754                                                                                                                                                      | Su, ON                              | 1                          |                           |                     |
| 397                | North                 | 7505S*<br>7505M*<br>7505L*                                                                                                                                | Rp,Fm, ON                           | 2                          |                           |                     |
| 398                | North                 | 7515S*<br>7515M*<br>7515L*                                                                                                                                | Rp,Fm, ON                           | 2                          | DM                        |                     |
| 399                | North                 | 75BP05M*<br>75BP05L*                                                                                                                                      | Rp,Fm, ON                           | 2                          |                           |                     |

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 400                           | North                 | 75BP15M*<br>75BP15L*          | Rp,Fm, ON                           | 2                          | DM                        |                     |
| 401                           | North                 | 7605*<br>7605S*               | Rp,Fm, FF                           | 2                          |                           |                     |
| 402                           | North                 | 7615*<br>7615S*               | Rp,Fm, FF                           | 2                          | DM                        |                     |
| 433                           | USD                   | 2113-00<br>2213-00<br>2313-00 | Rp,Fm, ON                           | 2                          | DM                        | OV/SO2/HCl<br>Cl    |
| 434                           | USD                   | 3213-00                       | Rp,Fm, ON                           | 2                          | DM                        | OV/SO2/HCl<br>Cl    |
| 454                           | USD                   | 3203-00                       | Rp,Fm, FF                           | 2                          |                           | OV/SO2/HCl<br>Cl    |
| 461                           | MSA                   | 472749                        | Rp,Bm, ON                           | 2                          | DM                        | SO2/HCl/Cl          |
| 462                           | MSA                   | 472750                        | Rp,Bm, ON                           | 2                          | DM                        | OV/SO2/HCl<br>Cl    |
| 466                           | MSA                   | 472756                        | Rp,Bm, ON                           | 2                          | HA                        | OV/SO2/HCl<br>Cl    |
| 467                           | MSA                   | 472757                        | Rp,Bm, ON                           | 2                          | DFMR                      | OV/SO2/HCl<br>Cl    |
| 470                           | MSA                   | 472760                        | Rp,Bm, ON                           | 2                          | HA                        | SO2/HCl/Cl          |
| 472                           | MSA                   | 472764                        | Rp,Bm, ON                           | 2                          | DM                        | OV/SO2/HCl<br>Cl    |
| 475                           | 3M                    | 7216                          | Rp,Fm, ON                           | 2                          |                           |                     |

## CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                                   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 486                           | 3M                    | 8775                                                                                 | SU, ON                              | 1                          | DM                        |                     |
| 503                           | 3M                    | 7217                                                                                 | Rp, FM, ON                          | 2                          | DM                        |                     |
| 505                           | AO                    | R4060A<br>S4060A<br>R5060A<br>S5060A<br>R6060A<br>S6060A<br>R5560A<br>S5560A         | Rp, FM, ON                          | 2                          |                           |                     |
| 506                           | AO                    | R7060A<br>S7060A<br>R7760A<br>S7760A                                                 | Rp, FM, FF                          | 1                          |                           |                     |
| 507                           | AO                    | R4060AD<br>S4060AD<br>R5060AD<br>S5060AD<br>R6060AD<br>S6060AD<br>R5560AD<br>S5560AD | Rp, FM, ON                          | 2                          | DM                        |                     |
| 508                           | AO                    | R7060AD<br>S7060AD<br>R7760AD<br>S7760AD                                             | Rp, FM, FF                          | 2                          | DM                        |                     |
| 511                           | MSA                   | 469728                                                                               | Rp, FM, ON                          | 1                          | DM                        | OV/SO2/HCl<br>Cl    |
| 512                           | MSA                   | 469729                                                                               | Rp, FM, ON                          | 1                          | DM                        | OV/SO2/HCl<br>Cl    |

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                                                    | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 517                           | Scott                 | 64-AG-H<br>64E-AG-H<br>64M-AG-H<br>64ME-AG-H<br>64S-AG-H<br>64SE-AG-H | Rp,FM, ON                           | 2                          | HRA                       | SO2/HCl/Cl          |
| 518                           | Scott                 | 65-AG-H<br>65S-AG-H                                                   | Rp,FM, FF                           | 2                          | HRA                       | SO2/HCl/Cl          |
| 521                           | Scott                 | 64-OA-H<br>64E-OA-H<br>64M-OA-H<br>64ME-OA-H<br>64S-OA-H<br>64SE-OA-H | Rp,FM, ON                           | 2                          | HRA                       | OV/SO2/HCl<br>Cl    |
| 522                           | Scott                 | 65-OA-H<br>65S-OA-H                                                   | Rp,FM, FF                           | 2                          | HRA                       | OV/SO2/HCl<br>Cl    |
| 532                           | USD                   | 2143-00<br>2243-00<br>2343-00                                         | Rp,FM, ON                           | 2                          | DFMR                      | OV/SO2/HCl<br>Cl    |
| 533                           | USD                   | 3243-00                                                               | Rp,FM, FF                           | 2                          | DFMR                      | OV/SO2/HCl<br>Cl    |
| 652                           | North                 | 7592S,M,L<br>7792S,M,L                                                | Rp,Fm, ON                           | 2                          | DFM                       | SO2/HCl<br>Cl       |
| 653                           | North                 | 75BP92M<br>75BP92L                                                    | Rp,BM, ON                           | 2                          | DFM                       | SO2/HCl/Cl          |
| 654                           | North                 | 7692<br>7692S                                                         | Rp,Fm, FF                           | 2                          | DFM                       | SO2/HCl<br>Cl       |



## CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                        | Respirator<br>and Facepiece<br>Type                                                                                        | Number<br>of<br>Cartridges                                                      | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------|---------------------|
| 697                | 3M                    | 7816<br>7816C                             | Rp, Fm, FF<br><br>(For 7816C Combination Type C, CF)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 |                           |                     |
| 698                | 3M                    | 7817<br>7817C                             | Rp, Fm, FF<br><br>(For 7817C Combination Type C, CF)<br>Air pressure<br>(psig)<br>15 - 45<br>17 - 50<br>22 - 60<br>25 - 75 | 2<br><br>Hose length<br>(feet)<br>25 - 50<br>75 - 100<br>125 - 200<br>225 - 300 | DMZ                       |                     |
| 699                | Willson               | 1226/R/S/SR/SS/SSS<br>S1226/R/S/SR/SS/SSS | ON, Rp, Fm                                                                                                                 | 2                                                                               |                           | SO2/Cl/HCl          |
| 700                | Willson               | 1626, 1726                                | FF, Rp, Fm                                                                                                                 | 2                                                                               |                           | SO2/Cl/HCl          |
| 701                | Willson               | 1526, 1526R<br>1526SS                     | ON, Rp, Fm                                                                                                                 | 2                                                                               |                           | SO2/Cl/HCl          |
| 702                | Willson               | 3026/R/S/SR/SS/SSS<br>S3026/R/S/SR/SS/SSS | ON, Rp, Bm                                                                                                                 | 2                                                                               |                           | SO2/Cl/HCl          |
| 703                | Willson               | 3126, 3226                                | FF, Bm, Rp                                                                                                                 | 2                                                                               |                           | SO2/Cl/HCl          |
| 704                | Willson               | 3526, 3526R<br>3526SS                     | ON, Bm, Rp                                                                                                                 | 2                                                                               |                           | SO2/Cl/HCl          |

CHEMICAL CARTRIDGES - OTHER GASES AND VAPORS - FORMALDEHYDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)                            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|-----------------------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 705                           | Willson               | 122610/R/S/SR/SS/SSS<br>S122610/R/S/SR/SS/SSS | ON, Rp, Fm                          | 2                          | DM                        | SO2/Cl/HCl          |
| 706                           | Willson               | 152610<br>152610R<br>152610SS                 | ON, Rp, Fm                          | 2                          | DM                        | SO2/Cl/HCl          |
| 707                           | Willson               | 162610<br>172610                              | FF, Rp, Fm                          | 2                          | DM                        | SO2/Cl/HCl          |
| 708                           | Willson               | 302610/R/S/SR/SS/SSS<br>S302610/R/S/SR/SS/SSS | ON, Rp, Bm                          | 2                          | DM                        | SO2/Cl/HCl          |
| 709                           | Willson               | 312610<br>322610                              | FF, Rp, Bm                          | 2                          | DM                        | SO2/Cl/HCl          |
| 710                           | Willson               | 352610<br>352610R<br>352610SS                 | ON, Rp, Bm                          | 2                          | DM                        | SO2/Cl/HCl          |
| 711                           | Willson               | 122617/R/S/SR/SS/SSS<br>S122617/R/S/SR/SS/SSS | ON, Rp, Fm                          | 2                          | DFM                       | SO2/Cl/HCl          |
| 712                           | Willson               | 162617<br>172617                              | FF, Rp, Fm                          | 2                          | DFM                       | SO2/Cl/HCl          |
| 713                           | Willson               | 152617<br>152617R<br>152617SS                 | FF, Rp, Fm                          | 2                          | DFM                       | SO2/Cl/HCl          |
| 714                           | Willson               | 302617/R/S/SR/SS/SSS<br>S302617/R/S/SR/SS/SSS | ON, Rp, Bm                          | 2                          | DFM                       | SO2/Cl/HCl          |
| 715                           | Willson               | 312617<br>322617                              | FF, Rp, Bm                          | 2                          | DFM                       | SO2/Cl/HCl          |

CHEMICAL CARTRIDGES -- OTHER GASES AND VAPORS -- FORMALDEHYDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)            | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|-------------------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                               |                                     |                            |                           |                     |
| 716                | Willson               | 352617<br>352617R<br>352617SS | ON, Rp, Bm                          | 2                          | DFM                       | SO2/Cl/HCl          |



**POWERED AIR PURIFYING RESPIRATORS**

## F. Powered Air Purifiers

### 1. Gas Masks

#### Approval

See approval label for specific approval information and limitations.

#### Limitations

For respirators evaluated and approved by MSHA under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH, except evaluated under Part 18 for use in methane air atmospheres.

For respirators not approved under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life or health.

(Tight Fitting Facepiece). Do not use if airflow is less than four cubic feet per minute.

(Loose Fitting Hoods or Helmets). Do not use if airflow is less than six cubic feet per minute.

In making renewal and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instructions and maintenance manual for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing canisters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

## POWERED AIR PURIFYING GAS MASKS - OV

| Approval<br>Number | Approval  | Model            | Respirator | Facepiece | DFM      | Other gas             |
|--------------------|-----------|------------------|------------|-----------|----------|-----------------------|
| TC-14G-            | Issued to | Number(s)        | Type       | Type      | Approval | and Vapor<br>Approval |
| 122                | Racal     | BE 3/A<br>BE 7/A | PAPR       | FF        |          |                       |

## POWERED AIR PURIFYING GAS MASKS - CHLORINE

| Approval<br>Number | Approval  | Model            | Respirator | Facepiece | DFM      | Other gas             |
|--------------------|-----------|------------------|------------|-----------|----------|-----------------------|
| TC-14G-            | Issued to | Number(s)        | Type       | Type      | Approval | and Vapor<br>Approval |
| 123                | Racal     | BE 3/B<br>BE 7/B | PAPR       | FF        |          | HCl                   |

## POWERED AIR PURIFYING GAS MASKS - AMMONIA

| Approval<br>Number | Approval  | Model            | Respirator | Facepiece | DFM      | Other gas             |
|--------------------|-----------|------------------|------------|-----------|----------|-----------------------|
| TC-14G-            | Issued to | Number(s)        | Type       | Type      | Approval | and Vapor<br>Approval |
| 132                | Racal     | BE 3/K<br>BE 7/K | PAPR       | FF        |          | MA                    |

## POWERED AIR PURIFYING GAS MASKS - METHYLAMINE

| Approval<br>Number | Approval  | Model            | Respirator | Facepiece | DFM      | Other gas             |
|--------------------|-----------|------------------|------------|-----------|----------|-----------------------|
| TC-14G-            | Issued to | Number(s)        | Type       | Type      | Approval | and Vapor<br>Approval |
| 132                | Racal     | BE 3/K<br>BE 7/K | PAPR       | FF        |          | NH3                   |

## POWERED AIR PURIFYING GAS MASKS - AMMONIA

| Approval<br>Number | Approval  | Model            | Respirator | Facepiece | DFM      | Other gas             |
|--------------------|-----------|------------------|------------|-----------|----------|-----------------------|
| TC-14G-            | Issued to | Number(s)        | Type       | Type      | Approval | and Vapor<br>Approval |
| 133                | Racal     | BE 3/E<br>BE 7/E | PAPR       | FF        |          |                       |

## 2. Particulate

### Approval

See approval label for specific approval information and limitations.

### Limitations

For respirators evaluated and approved by MSHA under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH, except evaluated under Part 18 for use in methane air atmospheres.

For respirators not approved under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life or health.

(Tight Fitting Facepiece). Do not use if airflow is less than four cubic feet per minute.

(Loose Fitting Hoods or Helmets). Do not use if airflow is less than six cubic feet per minute.

In making renewal and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instructions and maintenance manual for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing filters.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.



POWERED AIR PURIFYING PARTICULATE RESPIRATORS - DUSTS AND MISTS

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)                                                               | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|----------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| 197                           | Racal                 | AH5                                                                              | PAPR, HH                            | 1                    | A                  |
| 211                           | Racal                 | AH21<br>AH15                                                                     | PAPR, HH                            | 1                    | A                  |
| 235                           | 3M                    | W-325*                                                                           | PAPR, HH                            | 1                    | A, AB              |
| 294                           | Neoterik              | AB5<br>HH5                                                                       | PAPR, HH                            | 1                    |                    |
| 295                           | Neoterik              | AB6<br>VB6<br>VH6<br>HH6<br>SH6<br>SB6                                           | PAPR, HH                            | 1                    |                    |
| 298                           | Racal                 | DM1 BR<br>DM1 WR<br>DM1 BL<br>DM1 WL<br>DM1 BRU<br>DM1 WRU<br>DM1 BLU<br>DM1 WLU | PAPR, HH                            | 1                    | A                  |
| 299                           | Racal                 | DM3-S<br>DM3-U                                                                   | PAPR, HH                            | 1                    | A                  |
| 318                           | 3M                    | W425                                                                             | PAPR, HH                            | 1                    | A, AB              |

POWERED AIR PURIFYING PARTICULATE RESPIRATORS - HIGH EFFICIENCY

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)                                                                                                                                                                                                                                                | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|--------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|--------------------|
| TC-21C-            |                       |                                                                                                                                                                                                                                                                   |                                     |                      |                    |
| 136A               | 3M                    | W-250*<br>W-252*<br>W-254*<br>W-260-12<br>W-260-24*<br>W-261-12 S*/M/L<br>W-261-24 S*/M*/L*<br>W-266-12<br>W-266-24*<br>W-267*<br>W-278-12<br>W-278-24*<br>W-350*<br>W-349-12<br>W-289-12<br>W-289-24*<br>W-290*<br>W-295-12*<br>W-295-24*<br>W-297*<br>W-349-24* | PAPR, HH                            | 1                    | R                  |
| 137                | 3M                    | W-251*<br>W-252<br>W-265-12<br>W-265-24*                                                                                                                                                                                                                          | PAPR, HH                            | 1                    | AB                 |
| 186                | MSA                   | 463353<br>467963<br>463354<br>463355<br>466607<br>466608<br>467964                                                                                                                                                                                                | PAPR, FF                            | 2                    | A                  |
| 212                | Racal                 | AH3<br>AH3-1<br>AH3B<br>AH3B-1<br>AH17<br>AH17-1                                                                                                                                                                                                                  | PAPR, HH                            | 2                    | R, A               |

POWERED AIR PURIFYING PARTICULATE RESPIRATORS - HIGH EFFICIENCY

| Approval<br>Number<br>TC-21C- | Approval<br>Issued to | Model<br>Number(s)   | Respirator<br>and Facepiece<br>Type | Number of<br>Filters | Other<br>Approvals |
|-------------------------------|-----------------------|----------------------|-------------------------------------|----------------------|--------------------|
| 321                           | Racal                 | BE17/P3              | PAPR, HH                            | 3                    | A, R               |
| 324                           | Racal                 | BE8/P3               | PAPR, ON                            | 3                    | A, R               |
| 327                           | Neoterik              | NP1562-1             | PAPR, ON                            | 3                    | A, R               |
| 329                           | Racal                 | BE4/P3               | PAPR, HH                            | 3                    | A, R               |
| 330                           | Neoterik              | NP1664-1<br>NP1564-2 | PAPR, FF                            | 3                    | A, R               |
| 353                           | Racal                 | PF/PP/7SP3           | FF, PAPR                            | 1                    | A, R               |

### 3. Chemical Cartridges

#### Approval

See approval label for specific approval information and limitations.

#### Limitations

For respirators evaluated and approved by MSHA under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH, except evaluated under Part 18 for use in methane air atmospheres.

For respirators not approved under Part 18:

Not evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.

Not for use in atmospheres containing less than 19.5 percent oxygen.

Not for use in atmospheres immediately dangerous to life or health.

(Tight Fitting Facepiece). Do not use if airflow is less than four cubic feet per minute.

(Loose Fitting Hoods or Helmets). Do not use if airflow is less than six cubic feet per minute.

In making renewal and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instructions and maintenance manual for additional information on use and maintenance of these respirators.

Follow the manufacturer's instructions for changing cartridges.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

## POWERED AIR PURIFYING CHEMICAL CARTRIDGES - AMMONIA

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 589                           | Racal                 | BE 1/K               | PAPR, HH                            | 3                          |                           | MA                  |
| 590                           | Racal                 | BE 3/KC<br>BE 7/KC   | PAPR, FF                            | 3                          |                           | MA                  |
| 591                           | Racal                 | BE 5/K               | PAPR, HH                            | 3                          |                           | MA                  |
| 592                           | Racal                 | BE 6/K               | PAPR, HH                            | 3                          |                           | MA                  |
| 612                           | Racal                 | BE8/K                | PAPR, ON                            | 3                          |                           | MA                  |
| 628                           | Neoterik              | NP1562-8             | PAPR, ON                            | 3                          |                           | MA                  |
| 633                           | Racal                 | BE4/K                | PAPR, HH                            | 3                          |                           | MA                  |
| 639                           | Neoterik              | NP1664-8<br>NP1564-8 | PAPR, FF                            | 3                          |                           | MA                  |
| 641                           | Racal                 | BE1/KP3              | PAPR, HH                            | 3                          | HRA                       | MA                  |
| 642                           | Racal                 | BE3/KP3<br>BE7/KP3   | PAPR, FF                            | 3                          | HRA                       | MA                  |
| 643                           | Racal                 | BE4/KP3              | PAPR, HH                            | 3                          | HRA                       | MA                  |
| 644                           | Racal                 | BE5/KP3              | PAPR, HH                            | 3                          | HRA                       | MA                  |
| 645                           | Racal                 | BE6/KP3              | PAPR, HH                            | 3                          | HRA                       | MA                  |
| 646                           | Racal                 | BE8/KP3              | PAPR, ON                            | 3                          | HRA                       | MA                  |

## POWERED AIR PURIFYING CHEMICAL CARTRIDGES - METHYL AMINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 589                           | Racal                 | BE 1/K               | PAPR, HH                            | 3                          |                           | NH3                 |
| 590                           | Racal                 | BE 3/KC<br>BE 7/KC   | PAPR, FF                            | 3                          |                           | NH3                 |
| 591                           | Racal                 | BE 5/K               | PAPR, HH                            | 3                          |                           | NH3                 |
| 592                           | Racal                 | BE 6/K               | PAPR, HH                            | 3                          |                           | NH3                 |
| 612                           | Racal                 | BE8/K                | PAPR, ON                            | 3                          |                           | NH3                 |
| 628                           | Neoterik              | NP1562-8             | PAPR, ON                            | 3                          |                           | NH3                 |
| 633                           | Racal                 | BE4/K                | PAPR, HH                            | 3                          |                           | NH3                 |
| 639                           | Neoterik              | NP1664-8<br>NP1564-8 | PAPR, FF                            | 3                          |                           | NH3                 |
| 641                           | Racal                 | BE1/KP3              | PAPR, HH                            | 3                          | HRA                       | NH3                 |
| 642                           | Racal                 | BE3/KP3<br>BE7/KP3   | PAPR, FF                            | 3                          | HRA                       | NH3                 |
| 643                           | Racal                 | BE4/KP3              | PAPR, HH                            | 3                          | HRA                       | NH3                 |
| 644                           | Racal                 | BE5/KP3              | PAPR, HH                            | 3                          | HRA                       | NH3                 |
| 645                           | Racal                 | BE6/KP3              | PAPR, HH                            | 3                          | HRA                       | NH3                 |
| 646                           | Racal                 | BE8/KP3              | PAPR, ON                            | 3                          | HRA                       | NH3                 |

POWERED AIR PURIFYING CHEMICAL CARTRIDGES -- CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 479                           | Racal                 | BE 1/B               | PAPR,HH                             | 3                          |                           | HC1                 |
| 480                           | Racal                 | BE 5/B               | PAPR,HH                             | 3                          |                           | HC1                 |
| 481                           | Racal                 | BE 6/B               | PAPR,HH                             | 3                          |                           | HC1                 |
| 534                           | Racal                 | BE3/BC<br>BE7/BC     | PAPR, FF                            | 3                          |                           | HC1                 |
| 593                           | Racal                 | BE 1/E               | PAPR, HH                            | 3                          |                           | SO2/HC1             |
| 594                           | Racal                 | BE 3/EC<br>BE 7/EC   | PAPR, FF                            | 3                          |                           | SO2/HC1             |
| 595                           | Racal                 | BE 5/E               | PAPR, HH                            | 3                          |                           | SO2/HC1             |
| 596                           | Racal                 | BE 6/E               | PAPR, HH                            | 3                          |                           | SO2/HC1             |
| 597                           | Racal                 | BE 1/EP3             | PAPR, HH                            | 3                          | HRA                       | SO2/HC1             |
| 598                           | Racal                 | BE 3/EP3<br>BE 7/EP3 | PAPR, FF                            | 3                          | HRA                       | SO2/HC1             |
| 599                           | Racal                 | BE 5/EP3             | PAPR, HH                            | 3                          | HRA                       | SO2/HC1             |
| 600                           | Racal                 | BE6/EP3              | PAPR, HH                            | 3                          | HRA                       | SO2/HC1             |
| 603                           | Racal                 | BE17/P3              | PAPR, HH                            | 3                          | HRA                       | SO2/HC1             |
| 605                           | Racal                 | BE1/AE               | PAPR, HH                            | 3                          |                           | OV/SO2/HC1          |
| 606                           | Racal                 | BE3/AE<br>BE7/AE     | PAPR, FF                            | 3                          |                           | OV/SO2/HC1          |
| 607                           | Racal                 | BE5/AE               | PAPR, HH                            | 3                          |                           | OV/SO2/HC1          |

## POWERED AIR PURIFYING CHEMICAL CARTRIDGES - CHLORINE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 608                           | Racal                 | BE6/AE               | PAPR, HH                            | 3                          |                           | OV/SO2/HCl          |
| 610                           | Racal                 | BE8/B                | PAPR, ON                            | 3                          |                           | HCl                 |
| 613                           | Racal                 | BE8/E                | PAPR, ON                            | 3                          |                           | SO2/HCl             |
| 614                           | Racal                 | BE8/EP3              | PAPR, ON                            | 3                          | HRA                       | SO2/HCl             |
| 615                           | Racal                 | BE8/AE               | PAPR, ON                            | 3                          |                           | OV/SO2/HCl          |
| 626                           | Neoterik              | NP1562-7             | PAPR, ON                            | 3                          |                           | OV/SO2/HCl          |
| 627                           | Neoterik              | NP1562-6             | PAPR, ON                            | 3                          |                           | SO2/HCl             |
| 631                           | Racal                 | BE4/B                | PAPR, HH                            | 3                          |                           | HCl                 |
| 634                           | Racal                 | BE4/E                | PAPR, HH                            | 3                          |                           | SO2/HCl             |
| 635                           | Racal                 | BE4/EP3              | PAPR, HH                            | 3                          | HRA                       | SO2/HCl             |
| 636                           | Racal                 | BE4/AE               | PAPR, HH                            | 3                          |                           | OV/SO2/HCl          |
| 638                           | Neoterik              | NP1664-7<br>NP1564-7 | PAPR, FF                            | 3                          |                           | OV/SO2/HCl          |
| 640                           | Neoterik              | NP1664-6<br>NP1564-6 | PAPR, FF                            | 3                          |                           | SO2/HCl             |
| 647                           | Racal                 | BE3/AEP3<br>BE7/AEP3 | PAPR, FF                            | 3                          | HRA                       | OV/SO2/HCl          |
| 648                           | Racal                 | BE8/AEP3             | PAPR, ON                            | 3                          | HRA                       | OV/SO2/HCl          |



POWERED AIR PURIFYING CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 479                           | Racal                 | BE 1/B               | PAPR, HH                            | 3                          |                           | Cl                  |
| 480                           | Racal                 | BE 5/B               | PAPR, HH                            | 3                          |                           | Cl                  |
| 481                           | Racal                 | BE 6/B               | PAPR, HH                            | 3                          |                           | Cl                  |
| 534                           | Racal                 | BE3/BC<br>BE7/BC     | PAPR, FF                            | 3                          |                           | Cl                  |
| 593                           | Racal                 | BE 1/E               | PAPR, HH                            | 3                          |                           | SO2/Cl              |
| 594                           | Racal                 | BE 3/EC<br>BE 7/EC   | PAPR, FF                            | 3                          |                           | SO2/Cl              |
| 595                           | Racal                 | BE 5/E               | PAPR, HH                            | 3                          |                           | SO2/Cl              |
| 596                           | Racal                 | BE 6/E               | PAPR, HH                            | 3                          |                           | SO2/Cl              |
| 597                           | Racal                 | BE 1/EP3             | PAPR, HH                            | 3                          | HRA                       | SO2/Cl              |
| 598                           | Racal                 | BE 3/EP3<br>BE 7/EP3 | PAPR, FF                            | 3                          | HRA                       | SO2/Cl              |
| 599                           | Racal                 | BE 5/EP3             | PAPR, HH                            | 3                          | HRA                       | SO2/Cl              |
| 600                           | Racal                 | BE6/EP3              | PAPR, HH                            | 3                          | HRA                       | SO2/Cl              |
| 603                           | Racal                 | BE17/P3              | PAPR, HH                            | 3                          | HRA                       | SO2/Cl              |
| 605                           | Racal                 | BE1/AE               | PAPR, HH                            | 3                          |                           | OV/SO2/Cl           |
| 606                           | Racal                 | BE3/AE<br>BE7/AE     | PAPR, FF                            | 3                          |                           | OV/SO2/Cl           |
| 607                           | Racal                 | BE5/AE               | PAPR, HH                            | 3                          |                           | OV/SO2/Cl           |

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - HYDROGEN CHLORIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 608                           | Racal                 | BE6/AE               | PAPR, HH                            | 3                          |                           | OV/SO2/Cl           |
| 613                           | Racal                 | BE8/E                | PAPR, ON                            | 3                          |                           | SO2/Cl              |
| 614                           | Racal                 | BE8/EP3              | PAPR, ON                            | 3                          | HRA                       | SO2/Cl              |
| 615                           | Racal                 | BE8/AE               | PAPR, ON                            | 3                          |                           | OV/SO2/Cl           |
| 626                           | Neoterik              | NP1562-7             | PAPR, ON                            | 3                          |                           | OV/SO2/Cl           |
| 627                           | Neoterik              | NP1562-6             | PAPR, ON                            | 3                          |                           | SO2/Cl              |
| 631                           | Racal                 | BE4/B                | PAPR, HH                            | 3                          |                           | Cl                  |
| 634                           | Racal                 | BE4/E                | PAPR, HH                            | 3                          |                           | SO2/Cl              |
| 635                           | Racal                 | BE4/EP3              | PAPR, HH                            | 3                          | HRA                       | SO2/Cl              |
| 636                           | Racal                 | BE4/AE               | PAPR, HH                            | 3                          |                           | OV/SO2/Cl           |
| 638                           | Neoterik              | NP1664-7<br>NP1564-7 | PAPR, FF                            | 3                          |                           | OV/SO2/Cl           |
| 640                           | Neoterik              | NP1664-6<br>NP1564-6 | PAPR, FF                            | 3                          |                           | SO2/Cl              |
| 647                           | Racal                 | BE3/AEP3<br>BE7/AEP3 | PAPR, FF                            | 3                          | HRA                       | OV/SO2/Cl           |
| 648                           | Racal                 | BE8/AEP3             | PAPR, ON                            | 3                          | HRA                       | OV/SO2/Cl           |

## POWERED AIR PURIFYING CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 593                           | Racal                 | BE 1/E               | PAPR, HH                            | 3                          |                           | HCl/Cl              |
| 594                           | Racal                 | BE 3/EC<br>BE 7/EC   | PAPR, FF                            | 3                          |                           | HCl/Cl              |
| 595                           | Racal                 | BE 5/E               | PAPR, HH                            | 3                          |                           | HCl/Cl              |
| 596                           | Racal                 | BE 6/E               | PAPR, HH                            | 3                          |                           | HCl/Cl              |
| 597                           | Racal                 | BE 1/EP3             | PAPR, HH                            | 3                          | HRA                       | HCl/Cl              |
| 598                           | Racal                 | BE 3/EP3<br>BE 7/EP3 | PAPR, FF                            | 3                          | HRA                       | HCl/Cl              |
| 599                           | Racal                 | BE 5/EP3             | PAPR, HH                            | 3                          | HRA                       | HCl/Cl              |
| 600                           | Racal                 | BE6/EP3              | PAPR, HH                            | 3                          | HRA                       | HCl/Cl              |
| 603                           | Racal                 | BE17/EP3             | PAPR, HH                            | 3                          | HRA                       | HCl/Cl              |
| 605                           | Racal                 | BE1/AE               | PAPR, HH                            | 3                          |                           | OV/HCl/Cl           |
| 606                           | Racal                 | BE3/AE<br>BE7/AE     | PAPR, FF                            | 3                          |                           | OV/HCl/Cl           |
| 607                           | Racal                 | BE5/AE               | PAPR, HH                            | 3                          |                           | OV/HCl/Cl           |
| 608                           | Racal                 | BE6/AE               | PAPR, HH                            | 3                          |                           | OV/HCl/Cl           |
| 613                           | Racal                 | BE8/E                | PAPR, ON                            | 3                          |                           | HCl/Cl              |
| 614                           | Racal                 | BE8/EP3              | PAPR, ON                            | 3                          | HRA                       | HCl/Cl              |
| 615                           | Racal                 | BE8/AE               | PAPR, ON                            | 3                          |                           | OV/HCl/Cl           |

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - SULFUR DIOXIDE

| Approval<br>Number | Approval<br>Issued to | Model<br>Number(s)   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|--------------------|-----------------------|----------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| TC-23C-            |                       |                      |                                     |                            |                           |                     |
| 626                | Neoterik              | NP1562-7             | PAPR, ON                            | 3                          |                           | OV/HCl/Cl           |
| 627                | Neoterik              | NP1562-6             | PAPR, ON                            | 3                          |                           | HCl/Cl              |
| 634                | Racal                 | BE4/E                | PAPR, HH                            | 3                          |                           | HCl/Cl              |
| 635                | Racal                 | BE4/EP3              | PAPR, HH                            | 3                          | HRA                       | HCl/Cl              |
| 636                | Racal                 | BE4/AE               | PAPR, HH                            | 3                          |                           | OV/HCl/Cl           |
| 638                | Neoterik              | NP1664-7<br>NP1564-7 | PAPR, FF                            | 3                          |                           | OV/HCl/Cl           |
| 640                | Neoterik              | NP1664-6<br>NP1564-6 | PAPR, FF                            | 3                          |                           | HCl/Cl              |
| 647                | Racal                 | BE3/AEP3<br>BE7/AEP3 | PAPR, FF                            | 3                          | HRA                       | OV/HCl/Cl           |
| 648                | Racal                 | BE8/AEP3             | PAPR, ON                            | 3                          | HRA                       | OV/HCl/Cl           |

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - ORGANIC VAPORS

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 476                           | Racal                 | BE 1/A               | PAPR, H/H                           | 3                          |                           |                     |
| 477                           | Racal                 | BE 5/A               | PAPR, H/H                           | 3                          |                           |                     |
| 478                           | Racal                 | BE 6/A               | PAPR, H/H                           | 3                          |                           |                     |
| 482                           | Racal                 | BE 1/AP3             | PAPR, H/H                           | 3                          | HRA                       | pest                |
| 483                           | Racal                 | BE 3/AP3<br>BE 7/AP3 | PAPR, FF                            | 3                          | HRA                       | pest                |
| 484                           | Racal                 | BE 5/AP3             | PAPR, HH                            | 3                          | HRA                       | pest                |
| 485                           | Racal                 | BE 6/AP3             | PAPR, HH                            | 3                          | HRA                       | pest                |
| 535                           | Racal                 | BE3/AC<br>BE7/AC     | PAPR, FF                            | 3                          |                           |                     |
| 602                           | Racal                 | BE17/AP3             | PAPR, HH                            | 3                          | HRA                       | pest                |
| 605                           | Racal                 | BE1/AE               | PAPR, HH                            | 3                          |                           | SO2/HCl/Cl          |
| 606                           | Racal                 | BE3/AE<br>BE7/AE     | PAPR, FF                            | 3                          |                           | SO2/HCl/Cl          |
| 607                           | Racal                 | BE5/AE               | PAPR, HH                            | 3                          |                           | SO2/HCl/Cl          |
| 608                           | Racal                 | BE6/AE               | PAPR, HH                            | 3                          |                           | SO2/HCl/Cl          |
| 611                           | Racal                 | BE8/AP3              | PAPR, ON                            | 3                          | HRA                       | pest                |
| 615                           | Racal                 | BE8/AE               | PAPR, ON                            | 3                          |                           | SO2/HCl/Cl          |
| 625                           | Neoterik              | NP1562-5             | PAPR, ON                            | 3                          |                           |                     |

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - ORGANIC VAPORS

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 626                           | Neoterik              | NP1562-7             | PAPR, ON                            | 3                          |                           | SO2/HCl/Cl          |
| 630                           | Racal                 | BE4/A                | PAPR, HH                            | 3                          |                           |                     |
| 632                           | Racal                 | BE4/AP3              | PAPR, HH                            | 3                          | HRA                       | Pest                |
| 636                           | Racal                 | BE4/AE               | PAPR, HH                            | 3                          |                           | SO2/HCl/Cl          |
| 637                           | Neoterik              | NP1664-5<br>NP1564-5 | PAPR, FF                            | 3                          |                           |                     |
| 638                           | Neoterik              | NP1664-7<br>NP1564-7 | PAPR, FF                            | 3                          |                           | SO2/HCl/Cl          |
| 647                           | Racal                 | BE3/AEP3<br>BE7/AEP3 | PAPR, FF                            | 3                          | HRA                       | SO2/HCl/Cl          |
| 648                           | Racal                 | BE8/AEP3             | PAPR, ON                            | 3                          | HRA                       | SO2/HCl/Cl          |

POWERED AIR PURIFYING CHEMICAL CARTRIDGES - PESTICIDES

| Approval<br>Number<br>TC-23C- | Approval<br>Issued to | Model<br>Number(s)   | Respirator<br>and Facepiece<br>Type | Number<br>of<br>Cartridges | Other<br>Approvals<br>DFM | Gas<br>and<br>Vapor |
|-------------------------------|-----------------------|----------------------|-------------------------------------|----------------------------|---------------------------|---------------------|
| 482                           | Racal                 | BE 1/AP3             | PAPR, H/H                           | 3                          | HRA                       | OV                  |
| 483                           | Racal                 | BE 3/AP3<br>BE 7/AP3 | PAPR, FF                            | 3                          | HRA                       | OV                  |
| 484                           | Racal                 | BE 5/AP3             | PAPR, HH                            | 3                          | HRA                       | OV                  |
| 485                           | Racal                 | BE 6/AP3             | PAPR, HH                            | 3                          | HRA                       | OV                  |
| 602                           | Racal                 | BE17/AP3             | PAPR, HH                            | 3                          | HRA                       | OV                  |
| 611                           | Racal                 | BE8/AP3              | PAPR, ON                            | 3                          | HRA                       | OV                  |
| 632                           | Racal                 | BE4/AP3              | PAPR, HH                            | 3                          | HRA                       | OV                  |
| 682                           | Kasco                 | K80S-T4              | PAPR, HH                            | 3                          |                           |                     |

Respirators are required to provide protection against the hazard.

**Selection**

The type of respirator must be selected on the basis of the hazard.

The type of respirator must be selected on the basis of the hazard.

The type of respirator must be selected on the basis of the hazard.

The type of respirator must be selected on the basis of the hazard.

The type of respirator must be selected on the basis of the hazard.

The type of respirator must be selected on the basis of the hazard.

**VINYL CHLORIDE RESPIRATORS (11)**

This section shall be selected on the basis of the hazard.

This section shall be selected on the basis of the hazard.



G. Vinyl Chloride

Approval

Approved as respiratory protection against 10 parts per million vinyl chloride.

Limitations

Not for use in atmospheres immediately dangerous to life or health.

Not for use in atmospheres containing less than 19.5 percent oxygen.

In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.

Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.

Follow the manufacturer's instruction for changing sorbent element.

This respirator shall be carefully fitted to the wearer's face before use, in accordance with the manufacturer's facepiece fitting instructions.

This respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.

VINYL CHLORIDE RESPIRATORS APPROVED BY MSHA/NIOSH

| Approval<br>number<br>TC-11- | Approval<br>issued to | Model<br>number(s)                               | Respirator<br>type | Face-<br>piece<br>type |
|------------------------------|-----------------------|--------------------------------------------------|--------------------|------------------------|
| 1                            | Scott                 | 601460-01<br>601460-03<br>601460-11<br>601460-13 | Bm                 | ON                     |

# NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

A-BEC Industries  
1864 Vanderhorn Drive  
Memphis, TN 38134

Ace Enterprises  
820 Northwest 144th St.  
Miami, FL 33168

Acme Automotive Finishes  
101 Prospect Ave.  
Cleveland, OH 44115

AGA Corporation  
550 County Avenue  
Secaucus, NJ 07094

AGA Spiro, AB  
S-181  
81 Lidings  
Sweden

Air Components and Equipment, Inc.  
P.O. Box 16988  
Tampa, FL 33687

Air-Tek, Co.  
10205 Crosstown Circle  
Eden Prairie, MN 55344

Airolife Safety, Inc.  
1601 E. 361st Street  
Eastlake, Ohio 44094

American Optical Corp.  
Safety Products Div.  
14 Mechanic Street  
Southbridge, MA 01550

Anderson Manufacturing Co.  
1014 Fox Chase Road  
Rockledge, PA 19111

Auergesellschaft GMBH  
1000 Berlin 65 (West)  
Friedrich - Krause - Ufer 24

Balkamp Incorporated  
Indianapolis, IN 46241

Binks Manufacturing Co.  
9201 W. Belmont Ave.  
Franklin Park, IL 60131

Biosystems, Inc.  
Pistol Shop Road  
Rockfall, CT 06481

Bowen Tools, Inc.  
P.O. Box 3186  
Houston, TX 77001

Bullard, E. D., Co.  
2680 Bridgeway  
Sausalito, CA 94965

CSE Corporation  
600 Seco Road  
Monroeville, PA 15146

Canadian Technical Tape  
455 Cote Vertu Rd.  
Montreal H4N 1EB, CANADA

Cesco Safety Products  
Parmelec Industries, Inc.  
P.O. Box 1237  
Kansas City, MO 64141

Clark Sand Company, Inc.  
P.O. Box 4267  
No. Erhmann Street  
Pensacola, FL 32507

Clemco Industries  
1950 Elkhorn Court  
San Mateo, CA 94120

Clemco Industries  
3938 Swinnea Road  
Memphis, TN 38118

Clemtex, Ltd.  
248 McCarthy Drive  
Houston, TX 77020

Clifton Precision  
Division of Litton Ind.  
P.O. Box 303, Rt. 113  
Frederica, DE 19946

# NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

Clifton Precision  
5100 State Road  
Drexel Hill, PA 19026-4693

Cover, H.S. Co.  
107 East Alexander St.  
P.O. Box 192  
Buchanan, MI 49107

Defense Apparel  
285 Murphy Road  
Hartford, CT 06114

DeVilbiss Company  
300 Phillips Ave.  
P.O. Box 913  
Toledo, OH 43692

Dragerwerk, AG  
D-24 Luebeck 1  
Postfach 1339  
2400 Luebeck 1  
West Germany

Dual Safe Life Support Systems, Inc.  
P.O. Box 873  
2315 West Main Street  
Baytown, Texas 77520

Eastern Safety Equipment Co.  
45-17 Pearson St.  
Long Island City, NY 11101

Empire Abrasive Equipment Corp.  
990 Gantry Road  
Philadelphia, PA 19115

Encon Manufacturing Co.  
13333 Northwest Freeway  
P.O. Box 3826  
Houston, TX 77007

Fiber-Metal, P.O. Box 248  
Concordville, PA 19331

Gerson, Louis  
15 Sproat Street  
Middleboro, MA 02346

Glendale Protective Technologies Inc.  
130 Crossways Park Drive  
Woodbury, NY 11797

Globe Safety Products, Inc.  
125 Sunrise Place  
P.O. Box 7248  
Dayton, OH 45407

Inco, Willson Division  
2nd & Washington Sts.  
P.O. Box 622  
Reading, PA 19603

International Safety Devices  
16717 Smoketree Street  
Hesperia, CA 92345

International Safety Instruments  
Inc.  
480 Perry Street  
P.O. Box 846  
Lawrenceville, GA 30246

Interspiro AB  
S-181  
81 Lidings  
Sweden

Kasco Inc.  
Via Romania, 12  
42100 Reggio Emilia  
ITALY

Kelco Sales & Engineering Co.  
P.O. Box 422  
Norwalk, CA 90650

Key Houston, Inc.  
13911 Atlanta Blvd.  
Jacksonville, FL 32225

Lancs Industries, Inc.  
12704 NE 124th St.  
Kirkland, WA 98003-4091

Mafter Inc.  
8111 Edison  
Ville d'Anjou MTI  
Quebec, Canada H1J LS9

# NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

The Marthens Company  
1044 S. Dittmer Street  
Davenport, IA 52802

Mohawk Industrial Supply Company  
P.O. Box 945  
Manchester, CT 06040

Moldex-Metric Inc.  
4671 Leahy Street  
Culver City, CA 90230

Mine Safety Appliances Co.  
600 Penn Center Blvd.  
Pittsburgh, PA 15235

3M Company  
3M Center  
Building 230-B  
St. Paul, MN 55144-1000

National Draeger, Inc.  
101 Technology Drive  
P.O. Box 120  
Pittsburgh, PA 15230

National Mine Service  
4900/600 Grant Street  
Pittsburgh, PA 15219

Neoterik Health Tech., Inc.  
P.O. Box 128  
Woodsboro, MD 21798

North Safety Equipment  
2000 Plainfield Pike  
Cranston, RI 02920

Northcott Products Co.  
1826 W. Diversey Parkway  
Chicago, IL 60614

Nuclear Power Outfitters  
P.O. Box 737  
Crystal Lake, Illinois 60014

Ocenco, Inc.  
P.O. Box 8  
Route 22, East  
Blairsville, PA 15717

Parmelee Industries, Inc.  
1535 Walnut Street  
Kansas City, MO 64141

Pauli & Griffin  
137 Utah Ave.  
South San Francisco, CA 94080

Industrie Pirelli  
Azienda Articoli Vari Roma  
Via di Torrespaccata 140, 00169  
Rome, Italy

Portable Air Supply Systems Corp.  
3500 Carnegie Avenue  
Cleveland, OH 44115

Porter Warner Industries  
3819 Dorris Street  
P.O. Box 2158  
Chattanooga, TN 37409

Pulmosan Protective Equipment Corp.  
P.O. Box 622  
Reading, PA 19603

Racal Airstream, Inc.  
7209A Grove Road  
Frederick, MD 21701

Respiratory Systems  
18102 Sky Park South J  
Irvine, CA 92714

Rexnord Electronic Products, Inc.  
45 Great Valley Center  
Malvern, PA 19355-9990

Romiro Technology  
3500 Carnegie Avenue  
Cleveland, OH 44115

Safe-Tex  
Toronto, Ontario  
CANADA

Safety and Supply Co.  
5510 East Marginal Way South  
Seattle, WA 98134

NAMES AND ADDRESSES OF MANUFACTURERS AND DISTRIBUTORS

Safety Supply Co.  
Toronto, Ontario  
Canada

Safety Products Limited  
Holmethorpe Avenue, Redhill  
Surrey RH1 2PA  
UNITED KINGDOM

Schmidt Manufacturing Inc.  
14400 Alameda Road  
P.O. Box 45857  
Houston, TX 77045

Scott Aviation  
A Figgie International Company  
225 Erie Street  
Lancaster, NY 14086

Sellstrom Manufacturing Co.  
59 E. Van Buren St.  
Chicago, IL 60605

Shoplyne Safety Products  
Cleveland, Ohio 44107

Siebe-Norton Safety Products  
2000 Plainfield Pike  
Cranston, RI 02920

Siebe Gorman, Ltd.  
Avondale Way  
Cwmbran, Gwent, Wales  
NP4, 1YR, Chessington Surrey  
Great Britain

Standard Safety Equipment Corp.  
431 N. Quentin Road  
P.O. Box 188  
Palatine, IL 60067

Stewart-Warner  
Chicago, IL

Sulliblast  
Division of Sullair, Inc.  
105 Lauren Drive  
Belle Chase, LA 70037

Titan Abrasive Systems, Inc.  
P.O. Box 3  
Furlong, PA 18925

USD Corp.  
3323 W. Warner Ave.  
Santa Ana, CA 92702

United States Safety Service  
Parmelee Industries, Inc.  
P.O. Box 1237  
Kansas City, MO 64141

Zee Medical Products Co.  
Irvine, CA 92714

Appendix I: NIOSH Policy Statement on Approval of  
Air-Purifying Respirators with End-of-Service Life Indicators  
DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service  
Centers for Disease Control  
National Institute for Occupational Safety and Health

NIOSH/MSHA TESTING AND CERTIFICATION OF AIR-PURIFYING RESPIRATORS WITH  
END-OF-SERVICE-LIFE-INDICATORS

Agency: National Institute for Occupational Safety and Health (NIOSH)  
Action: Notice of Acceptance of Applications for Approval of Air-Purifying  
Respirators with End of Service Life Indicators

Summary: 30 CFR 11; Sec. 11.150 states that NIOSH and MSHA may, after a review of the effects on wearer's health and safety, approve respirators for gases and vapors not specifically listed in that Section. The current regulations also permit the use of "window indicators" for gas masks to warn the wearer when the canister will no longer remove a contaminant. [11.102-5(c)(2)].

Although indicators are not mentioned in Subpart L, Chemical Cartridge Respirators, there is nothing in the regulations which explicitly prohibit their use. A NIOSH policy to allow ESLI on air-purifying respirators for gases and vapors with adequate warning properties has already been established (Letter to All Respirator Manufacturers from Dr. Elliott Harris, June 18, 1975).

Use of ESLI on chemical cartridge respirators for use against gases and vapors with poor warning properties could also be approved since Subpart L states:

"Not for use against gases or vapors with poor warning properties (except where MSHA or Occupational Safety and Health Administration standards may permit such use for a specific gas or vapor). . ."  
[11.150 footnote (1)]. Thus air-purifying respirators with ESLI could be approved for substances such as acrylonitrile since the OSHA acrylonitrile standard permits the use of chemical cartridge respirators.

Under the present regulations, NIOSH can also require "any additional requirements deemed necessary to establish the quality, effectiveness, and safety of any respirator used as protection against hazardous atmospheres" [11.63(c)]. NIOSH must notify the applicants in writing of these additional requirements [11.63(d)].

The purpose of this notice is to notify respirator manufacturers and respirator users of the NIOSH requirements for approving air-purifying respirators with either effective passive or active ESLI for use against gases and vapors with adequate warning properties or for use against gases and vapors with inadequate warning properties whenever there is a regulatory standard already permitting the use of air-purifying respirators.

For Further Information Contact: Chief, Certification Branch, 944 Chestnut Ridge Road, Morgantown, WV 26505, (304)/291-4331.



### Supplemental Information

Because human senses are not foolproof in detecting gases and vapors and because many gases and vapors found in the workplace do not have adequate warning properties, NIOSH has been investigating alternate means of wearer detection. In 1976, NIOSH adopted its current policy which allows acceptance of applications for certification of air-purifying respirators for use against gases and vapors with poor warning properties not specifically listed in 30 CFR 11 only if the respirator is equipped with an active ESLI.

An active ESLI is defined as an indicator which invokes a spontaneous warning signal (e.g., flashing lights, ringing bells, etc.) which is automatic. An active indicator was required because the initiation of the warning device does not depend on any initiative of the respirator user. On the other hand, passive indicators, normally color change indicators, require monitoring by the wearer.

During the past several years, NIOSH has received expressions of concern from respirator manufacturers, regulatory agencies, and general industry regarding the Institute's policy of accepting only active ESLI for certification. In 1983, the issue has arisen twice. OSHA has requested that NIOSH start a certification program for mercury vapor respirators. Since mercury vapor does not have adequate warning properties, either an ESLI or appropriate administrative controls are necessary to ensure safe use of the respirator. More recently, a respirator manufacturer has submitted data on a respirator with a passive ESLI to the OSHA docket on ethylene oxide.

At the October 1983 Mine Health Research Advisory (MHRAC) meeting, NIOSH presented a briefing document, "Consideration of Use of End-of-Service-Life Indicators in Respiratory Protective Devices" and requested that MHRAC provide recommendations to the Institute with regard to the appropriateness of the use of both active and passive ESLI. MHRAC asked their Respirator Subcommittee to review the issue.

The Respirator Subcommittee held a public meeting in Washington, DC on December 19, 1983, to solicit comments from interested parties. The Subcommittee reviewed the comments and then reported back to the full committee at the February 2, 1984, MHRAC meeting.

In addition, based on the public comments, the Subcommittee also suggested a few additions or modifications be made to the NIOSH proposed evaluation criteria. NIOSH incorporated the recommendations. MHRAC also recommended that active and passive ESLI's are appropriate for use with respiratory protective devices so long as criteria are established for their certification and use which ensures that the user is not exposed to increase risk as a consequence of relying upon such ESLI's.

In order for NIOSH to determine the potential effects on user safety and health, it would be required that all applications for approval of gas and vapor respirators with ESLI contain the following information:

## CRITERIA FOR CERTIFICATION OF END-OF-SERVICE-LIFE INDICATORS

An applicant for certification of an ESLI for use against substances with poor warning properties must provide NIOSH with the following information:

1. Data demonstrating that the ESLI is a reliable indicator of sorbent depletion ( $\leq 90\%$  of service life). These shall include a flow-temperature study at low and high temperatures, humidities, and contaminant concentrations which are representative of actual workplace conditions where a given respirator will be used. A minimum of 2 contaminant levels must be utilized, the limit level (PEL, TLV, etc.) and the limit times the assigned protection factor for the respirator type.
2. Data on desorption of any impregnating agents used in the indicator, including a flow-temperature study at low and high temperatures and humidities which are representative of actual workplace conditions where a given respirator will be used. Data shall be sufficient to demonstrate safe levels of desorbed agents.
3. Data on the effects of industrial interferences which are commonly found in workplaces where a given respirator will be used. Data should be sufficient to show which interferences could impair the effectiveness of the indicator and the degree of impairment and which substances will not affect the indicator.

4. Data on any reaction products produced in the reaction between the sorbent and the contaminant gases and vapors, including the concentrations and toxicities of such products.
5. Data which predicts the storage life of the indicator. (Simulated aging tests will be acceptable).

In addition to the foregoing, all passive ESLI shall meet the following criteria:

1. A passive ESLI shall be placed on the respirator that it is visible to the wearer.
2. If the passive indicator utilizes color change, the change shall be such that it is detectable to people with physical impairments such as color blindness.
3. If the passive indicator utilizes color change, reference colors for the initial color of the indicator and the final (end point) color of the indicator shall be placed adjacent to the indicator.

All ESLI shall meet the following criteria:

1. The ESLI shall not interfere with the effectiveness of the face seal.

2. The ESLI shall not change the weight distribution of the respirator to the detriment of the facepiece fit.
3. The ESLI shall not interfere with required lines of sight.
4. Any ESLI that is permanently installed in the respirator facepiece shall be capable of withstanding cleaning and a drop from a 6 foot height. Replaceable ESLI must be capable of being easily removed and shall also be capable of withstanding a drop from a 6 foot height.
5. A respirator with an ESLI shall still meet all other applicable requirements set forth in 30 CFR 11.
6. If the ESLI uses any electrical components they shall conform to the provisions of the National Electrical Code and be "intrinsically safe." Where permissibility is required, the respirator shall meet the requirements for permissibility and intrinsic safety set forth in 30 CFR 18, Subpart D. Also, the electrical system shall include an automatic warning mechanism that indicates a loss of power.
7. Effects of industrial interferences which are commonly found where a given respirator will be used and which hinder ESLI performance shall be identified. Substances which are commonly found where the respirator is to be used must be investigated. Data sufficient to

indicate whether the performance is affected must be submitted to NIOSH. The user shall be made aware of use conditions that could cause false positive and negative ESLI responses.

8. The ESLI shall not create any hazard to the wearer's health or safety.
9. Consideration shall be given to the potential impact of common human physical impairments on the effectiveness of the ESLI.

Appendix II: NIOSH Policy Statement on Use of Respirators  
for Protection Against Asbestos.

[Excerpt from NIOSH Testimony at OSHA Asbestos Hearing]

Under Title 30, Code of Federal Regulations, Part 11 (30 CFR 11), NIOSH is required to test and certify respirators within the categories specified therein when such devices are submitted to NIOSH by applicants. Currently, 30 CFR 11, Subpart K defines a number of dust, fume, and mist respirators which may be used for protection against certain hazardous particulate atmospheres. Among the respirators defined in Subpart K are single-use dust respirators designed as respiratory protection against pneumoconiosis-producing and fibrosis-producing dusts, or dusts and mists. The Subpart goes on to list asbestos as one of the dusts against which the single-use dust respirator is designed to protect [Subpart K, Sec. 11.130(H)]. Though at the time of the promulgation of Subpart K, it may have been assumed appropriate to list asbestos as a fibrosis-producing particulate against which the single-use disposable respirator could be reasonably expected to provide adequate protection, NIOSH is no longer confident that such an assumption is reasonable because asbestos is also potent carcinogen. The current requirements of 30 CFR 11 for approval of a single-use dust respirator or dust and mist respirator do not include any tests with fibrous challenge. NIOSH is currently in the process of undertaking a comprehensive revision of 30 CFR 11 and intends to address the issue of appropriate respiratory protection for use against asbestos and to require that any respirator for which such approval is sought be proven to provide effective protection against asbestos. NIOSH may change the regulations included in 30 CFR 11 only in accordance with procedures set forth in the Administrative

Procedures Act. In the interim, NIOSH will continue to approve single-use and replaceable dust/mist respirators for use against asbestos when such approvals are applied for only because of the legal requirement in the current approval regulations. However, NIOSH does not recommend the use of such respirators where exposures to asbestos may occur on the basis that such is not a prudent occupational health risk.

Later in the testimony NIOSH further stated:

Since asbestos is a recognized carcinogen, NIOSH does not recommend the use of air purifying respirators for protection against asbestos.

The position OSHA is considering of permitting only the use of high efficiency air-purifying respirators, although an improvement over the old standard, may not adequately protect exposed workers."

This policy position is contained in

"The Statement of the National Institute for Occupational Safety and Health -- The Public Hearings on Occupational Exposure to Asbestos. June 21, 1984, OSHA Public Hearings".



Appendix III: NIOSH/MSHA Testing and Certification of Positive-  
Pressure Closed-Circuit Self-Contained Breathing Apparatus

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service  
Centers for Disease Control  
National Institute for Occupational Safety and Health

Agency: National Institute for Occupational Safety and Health (NIOSH)

Action: Notice of acceptance of applications for approval of  
positive-pressure closed-circuit self-contained breathing  
apparatus.

Summary: NIOSH will now accept applications for approval of  
positive-pressure closed-circuit self-contained breathing apparatus for use in  
mines and mining. In addition, this notice specifies the performance  
requirements for such apparatus to be certified as approved by the Mine Safety  
and Health Administration (MSHA) and NIOSH and the precautions and limitations  
on use of certified apparatus.

FOR FURTHER INFORMATION CONTACT: Ms. Nancy J. Bollinger, Chief, Certification  
Branch, Division of Safety Research, NIOSH, CDC, 944 Chestnut Ridge Road,  
Morgantown, West Virginia 26505, telephone: (304) 291-4331 or FTS 923-4331.

SUPPLEMENTARY INFORMATION: In accordance with the requirements of Title 30,  
Code of Federations, Part 11 (30 CFR 11), MSHA and NIOSH presently test and  
certify closed-circuit self-contained breathing apparatus. Unlike the  
certification of open-circuit breathing apparatus under the requirements of 30  
CFR 11 (Subpart H), which may be for demand (negative pressure) or  
pressure-demand (positive pressure) apparatus, the closed-circuit  
certifications are classified as to whether they are negative or positive  
pressure.

NIOSH was asked to develop new performance requirements for certification of  
positive-pressure closed-circuit self-contained breathing apparatus.  
Positive-pressure closed-circuit apparatus are now available, and there is a  
need for such apparatus for use in mines and mining atmospheres where long  
duration apparatus are required. On July 24, 1984, NIOSH sent a letter to  
interested persons, soliciting their comments on the practicability, safety, a  
nd need for such certification, requesting recommendations for performance  
criteria for such apparatus, and seeking suggestions which MSHA and NIOSH  
might apply to limitations on and cautions for safe use of such apparatus.

NIOSH reviewed the replies to that letter and determined, jointly with MSHA,  
that with certain limitations on safe use of the positive-pressure  
closed-circuit self-contained breathing apparatus, such apparatus should be  
certified as approved by MSHA and NIOSH. These certifications of approval  
will be issued in accordance with the provisions of 30 CFR 11.63(c). These

provisions permit MSHA and NIOSH to develop the additional performance requirements that are necessary to establish the quality, effectiveness, and safety for types of devices not described in 30 CFR 11 when used as protection against hazardous atmospheres. MSHA and NIOSH will issue certifications of approval for positive-pressure closed-circuit self contained breathing apparatus which meet the following new performance requirements as well as the existing applicable performance requirements of 30 CFR 11 for use in mines and mining.

#### Types of Positive-Pressure Closed-Circuit Self-Contained Breathing Apparatus to be Certified by NIOSH/MSHA

NIOSH has determined that there are two basic types of positive pressure closed-circuit self-contained breathing apparatus which may be certified: (1) apparatus which use a breathing gas of pure oxygen and (2) apparatus which use a breathing gas in which the oxygen concentration is greater than 23 percent by volume under normal pressure and temperature conditions.

#### Requirements for Certification of Positive-pressure Closed-circuit Self-Contained Breathing Apparatus

1. Where apparatus uses a breathing gas in which the oxygen concentration is greater than 23 percent by volume under normal pressure and temperature conditions as measured from the breathing gas container, the breathing gas will be respirable and not contain more than 30 percent by volume of oxygen under normal temperature and pressure conditions.

2. The positive-pressure closed-circuit self-contained breathing apparatus will meet all applicable requirements of 30 CFR 11 as prescribed for closed-circuit self-contained breathing apparatus, including those designated as demand-flow devices.

3. The positive pressure closed circuit self-contained breathing apparatus will maintain a positive pressure in the facepiece during all pressure and flow tests.

#### Limitations on and Precautions for Safe Use of Positive-pressure Closed Circuit Self Contained Breathing Apparatus

Available information does not demonstrate to the satisfaction of NIOSH that positive pressure closed-circuit self-contained breathing apparatus which uses a breathing gas of pure oxygen can be used during direct exposure to open flames and/or high radiant heat and assure the wearer's safety. Therefore, NIOSH has determined that until it has been demonstrated to the satisfaction of NIOSH that those devices can be worn under such conditions, it is prudent to presently limit the use of positive-pressure closed-circuit self-contained breathing apparatus which uses pure oxygen breathing gas, to mines and mining atmospheres which do not involve exposure to open flames or high radiant heat.

Under the conditions of approval as specified in the performance requirements, NIOSH has determined that a concentration between 19.5 and 30 percent oxygen in mixed breathing gas must be used in positive-pressure closed-circuit self-contained breathing apparatus to maintain a concentration of not less than 19.5 percent oxygen in the wearer's breathing zone under all conditions

of use. NIOSH has reviewed the available literature on the safety of using mixed gas with this oxygen concentration. It appears that although the number of materials that are flammable and the flammability of materials generally increases, while the ignition temperature of materials decreases, in breathing gas mixtures containing more than 23 percent oxygen, these effects are most significant when the oxygen concentration exceeds 30 percent. With the requirement of not more than 30 percent oxygen and the careful selection of component materials, NIOSH believes that where breathing gas mixtures with up to 30 percent oxygen are used in atmospheres containing open flames or high radiant heat, there will be no significant increased hazard to the wearer. Further, the design of positive-pressure closed-circuit self-contained breathing apparatus is such that the oxygen concentration in the wearer's breathing zone is normally less than the concentration of oxygen in the breathing gas container.

#### Approval label specifications

The following minimum limitations and conditions apply to positive-pressure closed-circuit self-contained breathing apparatus, and will appear on the approval label for each such device:

#### LIMITATIONS

1. Do not use this apparatus where there is direct exposure to open flames or in high radiant heat (This limitation applies to 100 percent oxygen apparatus only.)
2. Provide proper care, training, and maintenance of the apparatus as specifically described in the manufacturer's instructions and maintenance manuals.
3. After each use of this apparatus, a fully charged breathing gas container and a recharge of carbon dioxide scrubber shall be installed.
4. Thorough cleaning and disinfecting of facepiece, breathing tube, and breathing bag must be done in accordance with the manufacturer's instructions.

#### CAUTIONS

1. Keep exposed hair to a minimum when using apparatus near open flames or in high radiant heat.
2. A good facepiece seal is important since facepiece leakage will seriously reduce service time.
3. Use of pure oxygen or oxygen enriched air increases flammability and lowers the ignition temperature of most materials.

Dated: November 8, 1985.

J. Donald Millar, M.D.

Director, National Institute for Occupational Safety and Health.

[FR Doc. 85-27336 Filed 11-15-85; 8:45 am]

#### Appendix IV: NIOSH RESPIRATOR PROBLEM INVESTIGATION

Since July 1, 1982, NIOSH has been investigating reports of problems with MSHA/NIOSH-certified respirators that are received from NIOSH audits, regulatory agencies, and users and manufacturers of respirators. As of October 1, 1985, a total of 137 reports were received. Through the cooperative efforts of reporters, NIOSH, and the respirator manufacturers, a number of serious respirator problems have been resolved, improvements have been made in respirator design and performance, and respirator users have been advised where incorrect respirator use has been found.

The goals of the program are to maintain an effective problem reporting and resolution system, to increasingly justify the user's reliance on the MSHA/NIOSH respirator approval program, and to indicate to respirator manufacturers that NIOSH is sincere in its desire to increase the safety and reliability of certified respirators. The following is an up-to-date list of the names and addresses of persons who are responsible for investigation of problems with MSHA/NIOSH-certified respirators:

Mr. William Washburn  
AGA Corporation  
550 County Avenue  
Secaucus, NJ 07094

Mr. W. F. Moon  
H. S. Cover Co.  
107 East Alexander St.  
Buchanan, MI 49107

Mr. Mark Theno  
Air-Tek Company  
6472 Flying Cloud Drive  
Eden Prairie, MN 55344

Mr. S. B. Shearer  
CSE Corporation  
600 Seco Road  
Monroeville, PA 15146

Mr. Joseph Zdrok  
American Optical Corp.  
14 Mechanic Street  
Southbridge, MA 01550

Mr. Carl M. Fink  
Defense Apparel  
285 Murphy Road  
Hartford, CT 06114

Mr. Raymond O. Day  
Mr. Robert Meyer  
Binks Manufacturing Co.  
9201 W. Belmont Ave.  
Franklin Park, IL 60131

Dr. Helmut Sieber  
Draegerwerk AG Lubeck  
Postfach 1339  
2400 Lubeck 1  
Federal Republic of Germany

Mr. Steve Boro  
E. D. Bullard Company  
2680 Bridgeway  
Sausalito, CA 94965

Mr. Willie Yung  
Louis M. Gerson Company  
15 Sproat Street  
Middleboro, MA 02346

Mr. Marc Cooper  
Cesco Safety Prod./Parmelee Ind.  
U. S. Safety Service Co.  
P.O. Box 1237  
Kansas City, MO 64141

Mr. Joel Kaufman  
Glendale Protective Technologies Inc.  
130 Crossways Park Drive  
Woodbury, NY 11797

Mr. Martin Ziegler  
Mr. Ronald J. DeMeo  
Clifton Precision  
Litton Systems, Inc.  
750 W. Sproul Road  
Springfield, PA 19064-4084

Mr. Stephen H. Bates  
Globe Safety Equipment, Inc.  
PO Box 7248  
Dayton, OH 45407

Mr. Donald M. Dawson  
International Safety Instruments, Inc.  
PO Box 846  
Lawrenceville, GA 30246

Mr. Bengt Sjard  
Interspiro AB  
S-181 81 LIDINGO  
SWEDEN

Mr. Ron Therrin  
Lancs Industries  
12704 N. E. 124th Street  
Kirkland, WA 98033-4091

Mr. Robert E. Arroyo  
Masprot Safety Products Corp.  
2655 Le Jeune Road Suite 302  
Coral Gables, FL 33134

Mr. T. D. McConnell  
Mine Safety Appliances Company  
600 Penn Center Boulevard  
Pittsburgh, Pennsylvania 15235

Mr. Donald P. Wilmes  
3M Company 3M Center  
Building 230-B-06  
St. Paul, MN 55144

Mr. Albert Mintz  
Moldex/Metrics, Incorporated  
4671 Leahy Street  
Culver City, California 90230

Mr. Les Boord  
Mr. Wes Kenneweg  
National Draeger, Inc.  
P. O. Box 120  
Pittsburgh, Pennsylvania 15230

Mr. Stephen C. Smith  
National Mine Service Company  
600 N. Bell Ave., Bldg. 2, Ste 110  
Carnegie, Pennsylvania 15106

Mr. Ken Vaughn  
Neoterik Health Tech., Inc.  
P.O. Box 78  
Mt. Airy, MD 21771

Ms. C. E. Chappron  
North Safety Equipment  
2000 Plainfield Pike  
Cranston, RI 02920

Mr. Earl B. Jacobson  
Nuclear Power Outfitters  
PO Box 84  
Crystal Lake, IL 60014

Mr. Pat Droppleman  
Ocenco, Incorporated  
400 Academy Drive  
Northbrook, IL 60062

Mr. F. Levi-Senlgaglia  
Pirelli Industrial Products  
6 Ram Ridge Road  
Spring Valley, NY 10977

Mr. Ing G. Cappa  
Sekur S.P.A. - Pirelli Group  
Via di Torrespaccata, 140  
00169 Roma, ITALY

Mr. M. D. Shroff  
Pradeep Raja Bahadur Motilal Mansion  
1st Floor 11/43 Tamarind Street  
Fort Bombay - 400023, INDIA

Mr. Jay Parker  
Pulmosan Safety Equipment Corp.  
30 48 Linden Place  
Flushing, NY 11354

Mr. Donald Burd  
Racal Airstream, Inc.  
7309A Grove Road  
Frederick, MD 21701

Mr. Justin Mills  
Rexnord Safety Products  
45 Great Valley Parkway  
Malvern, PA 19355

Mr. Walter Anderson  
Robertshaw Controls Co.  
333 North Euclid Way  
Anaheim, CA 92803

Mr. Gerald S. Gilbert  
Romiro Technology  
3500 Carnegie Avenue  
Cleveland, OH 44115



Mr. Ian V. Maxwell  
Sabre Safety, Ltd.  
Ash Road, Aldershot  
Hampshire, GU12 4DD  
England

Mr. Paul McConnaughey  
Safety and Supply Co.  
5510 East Marginal Way South  
Seattle, WA 98134

Mr. Robert Brennan  
Scott Aviation  
225 Erie Street  
Lancaster, NY 14086

Mr. Simon Kugler  
Siebe Gorman, Ltd.  
Avondale Way, Cwmbran, Gwent, Wales  
NP4 1 YR, Great Britain

Mr. Jeff Moore  
Standard Safety Equipment Corp.  
P.O. Box 188  
Palatine, IL 60067

Ms Antonette Bonfiglio  
(Air-purifying respirators)  
U.S.D. Corp.  
3323 West Warner Ave.  
Santa Ana, CA 92702

Dr. Richard Stein  
(Atmosphere-supplying respirators)  
U.S.D. Corp.  
3323 West Warner Ave.  
Santa Ana, CA 92702

Mr. David Koch  
Willson Safety Products  
PO Box 622  
Reading, PA 19603

Mine Safety and Health Administration

Mr. Kenneth P. Klouse  
MSHA Approval and Certification Center  
PO Box 251, Route 1  
Triadelphia, WV 26059

National Institute for Occupational Safety and Health

Respirator Problem Coordinator  
Division of Safety Research  
NIOSH, CDC, PHS, HHS  
944 Chestnut Ridge Road  
Morgantown, WV 26505

APPENDIX V.

THE FOLLOWING USERS' NOTICES HAVE BEEN ISSUED BY NIOSH SINCE OCTOBER 1, 1985:



Centers for Disease Control  
National Institute for Occupational  
Safety and Health - ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505

January 6, 1986

Letter to Editors of Industrial Health and Safety Publications

Subject: Recall and Retrofit of Luxfer Aluminum Cylinders.

Since the first rupture of a Luxfer 4500-psi fiber-glass hoop-wrapped aluminum cylinder occurred in 1983, the National Institute for Occupational Safety and Health (NIOSH) has been concerned about continued use of these cylinders with MSHA/NIOSH-approved self-contained breathing apparatus. The Department of Transportation (DOT) has required retrofit of a steel neck ring to these cylinders. The neck ring is designed to prevent cylinder rupture. NIOSH considers any breathing apparatus incorporating a Luxfer 4500-psi fiber-glass hoop-wrapped aluminum cylinder without a neck ring, to be unapproved.

NIOSH, DOT, Luxfer, respirator manufacturers, and other Federal, industrial and fire service organizations have made intensive efforts to promote the recall and retrofit of these cylinders. According to the cylinder manufacturer (Luxfer USA Ltd.) there are approximately 17,000 cylinders which have not been retrofitted with a steel neck ring.

The affected cylinders bear a DOT exemption marking which is either DOT-E 7235 4500 or CTC/DOT-E 7235 4500. The cylinders are fiber-glass wrapped from the flat bottom to the crown. The cylinders are used on MSHA/NIOSH-approved self-contained breathing apparatus made by Bendix, Clifton Precision, Draeger, Siebe Gorman, Scott, and U.S.D. (SurvivAir).

The enclosed photograph shows two CTC-DOT-E 7235 4500 cylinders. The cylinder on the left has been fitted with the required neck ring. The cylinder on the right does not have the required neck ring.

Anyone finding a DOT-E 7235 4500 cylinder which is not equipped with a steel neck ring, should immediately depressurize that cylinder and call Luxfer USA Ltd., at 714-684-5110, for further instructions.

NIOSH will appreciate any assistance you can offer in passing this information on to the readers of your publication. Thank you for your interest and assistance in this matter.

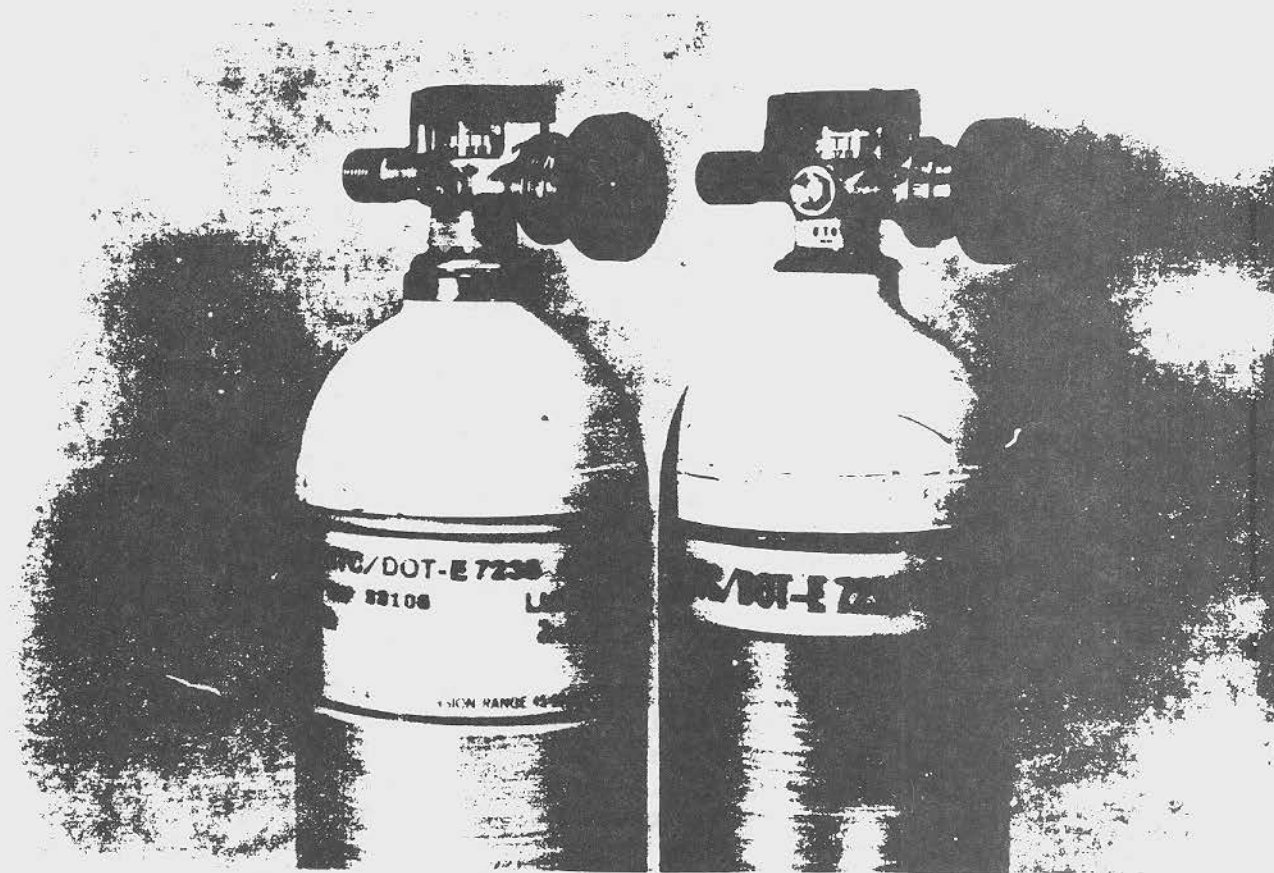
Sincerely yours,



John B. Moran  
Director  
Division of Safety Research

Enclosure







Centers for Disease Control  
National Institute for Occupational  
Safety and Health - ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505

January 17, 1986

RESPIRATOR USERS NOTICE

Inspection of Certain Aluminum Cylinders for Breathing-gas Pressure

The light weight and high charging pressure of aluminum cylinders have resulted in their widespread acceptance and use with self-contained breathing apparatus (SCBA). The National Institute for Occupational Safety and Health (NIOSH) estimates that more than half of the SCBA of 30- and 60-minute duration in regular use today are equipped with aluminum cylinders.

Since first receiving reports of defective fiber-glass wrapped aluminum cylinders in 1983, NIOSH has advised users of potential hazards associated with use of certain fiber-glass wrapped aluminum cylinders. At this time, NIOSH believes there is sufficient evidence to warrant issuance of this NOTICE regarding inspection of fiber-glass wrapped aluminum cylinders.

The presently available evidence indicates that fiber-glass wrapped aluminum cylinders manufactured under Department of Transportation (DOT) exemptions DOT-E 7235 and DOT-E 8059 (including 2216 and 4500 psi) may, upon aging, develop neck cracks and may leak breathing gas during storage and use. This may result in significant loss of breathing gas from an unattended cylinder. If undetected, this loss of breathing gas could be dangerous to the user.

Based on this, NIOSH recommends that where SCBA are equipped with fiber-glass wrapped aluminum cylinders, inspection for cylinder pressure should be made at least weekly, for stored units. When used on a daily basis, as in fire fighting, cylinder pressure should be checked daily and immediately before use.

If a leak is suspected, the cylinder and cylinder valve should be tested as prescribed in American National Standard, Z88.5-1981, Practices for Respiratory Protection for the Fire Service, Section 6.2.4.2.

Leaks in cylinders should be reported to the SCBA manufacturer who will, in turn report them to the cylinder manufacturer. The numbers and charging pressures of leaking cylinders should also be reported to DOT (Mr. Art Mallen, DOT Office of Hazardous Materials, 400 7th St. SW, Washington, DC 20590) and to NIOSH (Mr. John Moran at the address shown at the top of this letter).

Aluminum cylinders used with SCBA, with exemption numbers other than DOT-E 7235 and DOT-E 8059 are not covered in this notice. Self-contained self rescuers used in mines are also not included.

MORE

R E M I N D E R

January 17, 1986

Manufacturers of MSHA/NIOSH-approved SCBA  
Incorporating DOT-E 7235 4500 Fiber-glass Wrapped Aluminum Cylinders

The following manufacturers incorporate DOT-E 7235 4500 cylinders in their MSHA/NIOSH-approved SCBA:

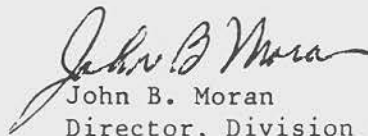
- |                     |                      |
|---------------------|----------------------|
| o Bendix            | o Siebe Gorman       |
| o Clifton Precision | o Scott              |
| o Draeger           | o U.S.D. (SurvivAir) |

DOT-E 7235 4500 cylinders must be retrofitted by Luxfer (Telephone: 714-684-5110) with steel neck rings, to prevent explosive rupture. DOT regulations prohibit charging of any DOT-E 7235 4500 cylinder that has not been fitted with a steel neck ring. Any apparatus utilizing a DOT-E 7235 4500 cylinder without a neck ring, is considered unapproved by MSHA/NIOSH.

Change in Address of Manufacturer's Contact

The following address change has been reported to NIOSH for manufacturer's personnel who are responsible for handling reports of problems with MSHA/NIOSH-approved respirators:

Clifton Precision: New Address: 750 West Sproul Road, Springfield, PA  
19064-4084  
Contact: Mr. Martin Ziegler

  
John B. Moran

Director, Division of Safety Research



Centers for Disease Control  
National Institute for Occupational  
Safety and Health – ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

January 22, 1986

LETTER TO RESPIRATOR MANUFACTURERS

SUBJECT: USE OF KEL-F IN HIGH PRESSURE CONNECTIONS ON CLOSED-CIRCUIT OXYGEN  
SELF-CONTAINED BREATHING APPARATUS

The National Institute for Occupational Safety and Health (NIOSH) has just experienced an incidence of auto-ignition of Kel-F in the cylinder valve seat of a closed-circuit oxygen self-contained breathing apparatus. This ignition occurred during approval testing and filled the wearer's breathing zone with an odorous gas. Fortunately, there does not appear to have been any ill effects to the wearer, who quickly removed the facepiece.

This problem of Kel-F combustion was first brought to the attention of NIOSH in 1983. It was reported to NIOSH by the Nuclear Regulatory Commission (NRC) and is the subject of NRC Information Notice No. 83-67. A copy of that NRC Information Notice is enclosed.

The purpose of this letter is to advise you of this situation and to request that you review the design of any oxygen closed-circuit apparatus you may be manufacturing or proposing to manufacture, to determine the advisability of the use of Kel-F therein.

Sincerely yours,

John B. Moran  
Director  
Division of Safety Research

Enclosure

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
WASHINGTON, D.C. 20555

October 11, 1983

IE INFORMATION NOTICE NO. 83-67: EMERGENCY-USE RESPIRATOR MATERIAL DEFECT  
CAUSES PRODUCTION OF NOXIOUS GASES

Addressees:

All nuclear power reactor facilities holding an operating license (OL) or construction permit (CP), research and test reactor licensees, fuel cycle licensees, and Priority I material licensees.

Purpose:

This information notice is provided to inform licensees of a potentially serious problem with the Bio-Pak 60-P respirator manufactured by Rexnord Company (NIOSH/MSHA approval number TC 13F-85). This respirator is approved for emergency use by the National Institute for Occupational Safety and Health (NIOSH) and is a closed-circuit, positive-pressure self-contained breathing apparatus (SCBA). The oxygen supply valve seat of the high pressure oxygen bottle (manufactured prior to 1981) tends to shear during valve operation, creating Kel-F<sup>TM</sup> fibers. During startup for operation, these fibers ignited in the pure oxygen supply stream, releasing combustion products including CO<sub>2</sub>, CO, CF<sub>4</sub>, and HF. It is expected that licensees will review the information for applicability to their facilities. Further NRC action may result from feedback from the ongoing NIOSH review effort. No written response to this notice is required.

Description of Circumstances:

During a July 1983 training session conducted at Southern California Edison Company's San Onofre Nuclear Generating Station (SONGS), hot gases and noxious odors filled the facepiece of a Bio-Pak 60-P respirator being used as a training aid. SONGS contacted the manufacturer and learned that Rexnord had become aware of the problem sometime during 1981 and had subsequently directed the oxygen-bottle vendor to replace the Kel-F valve seat with another material, Vespel<sup>TM</sup>. In discussions with the licensee, Rexnord stated that their previous findings were that the combustion products liberated by the burning Kel-F were in concentrations less than their respective threshold limiting values (TLVs). The previously produced units with the defective Kel-F materials were not recalled, and customer/users and NIOSH were not notified of the problem or the unauthorized change to the respirator.

Attachment  
IN 83-67  
October 11, 1983

LIST OF RECENTLY ISSUED  
IE INFORMATION NOTICES

| Information<br>Notice No. | Subject                                                                                            | Date of<br>Issue | Issued to                                                                                                                                    |
|---------------------------|----------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 83-66                     | Facility at Argentine<br>Critical Facility                                                         | 10/7/83          | All nuclear power<br>facilities holding<br>an OL or CP; non-<br>power reactor,<br>critical facility and<br>fuel cycle licensees              |
| 83-65                     | Surveillance of Flow in RTD<br>Bypass Loops Used in Westing-<br>house Plants                       | 10/07/83         | All Westinghouse<br>facilities holding<br>an OL or CP                                                                                        |
| 83-64                     | Lead Shielding Attached to<br>Safety-Related Systems<br>Without 10 CFR 50.59<br>Evaluations        | 09/29/83         | All power reactor<br>facilities holding<br>an OL or CP                                                                                       |
| 83-63                     | Potential Failures of<br>Westinghouse Electric Cor-<br>poration Type SA-1 Differen-<br>tial Relays | 09/26/83         | All power reactor<br>facilities holding<br>an OL or CP                                                                                       |
| 83-62                     | Failure of Redundant Toxic<br>Gas Detectors Position at<br>Control Room Ventilation<br>Air Intakes | 09/26/83         | All power reactor<br>facilities holding<br>an OL or CP                                                                                       |
| 83-61                     | Alleged Use of Stand-Ins for<br>Welder Qualification Tests                                         | 09/26/83         | All power reactor<br>facilities holding<br>an OL or CP                                                                                       |
| 83-60                     | Falsification of Test Results<br>for Protective Coatings                                           | 09/22/83         | All power reactor<br>facilities holding<br>an OL or CP & nuclear<br>fuel facility<br>licensees                                               |
| 83-59                     | Dose Assignment For Workers<br>In Non-Uniform Radiation<br>Fields                                  | 09/15/83         | All power reactor<br>facilities holding<br>an OL or CP,<br>research and test<br>reactors, fuel<br>cyc facilities, and<br>material licensees. |

OL = Operating License  
CP = Construction Permit



NOV 15 1985

MEMORANDUM FOR REGIONAL ADMINISTRATORS

THRU: JOHN B. MILES *JBM*  
Director  
Directorate of Field Operations

FROM: STEPHEN J. MALLINGER *S. Mallinger*  
Acting Director  
Directorate of Technical Support

SUBJECT: Use of Bureau of Mines Approved Gas Mask Canisters

We have received several inquiries concerning the use of Bureau of Mines approved gas mask canisters. These canisters were approved under the Bureau of Mines Schedule 14F for protection against many highly toxic substances such as hydrogen sulfide, hydrogen cyanide and phosphine. All these canisters were approved for concentrations far above their respective immediately dangerous to life or health (IDLH) values and none of these compounds has adequate odor warning properties for the respirator wearer to detect excessive facepiece leakage or sorbent breakthrough.

Although the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) have extended the expiration date for the Bureau of Mines approved gas mask canisters, NIOSH indicated that they could not conduct quality control testing on these canisters to assure that the performance meets the certification requirements.

In view of the above facts, it is concluded that the Bureau of Mines approved gas mask canisters for protection against hydrogen sulfide, hydrogen cyanide and phosphine may not provide adequate margin of safety to the respirator wearers. Their use for other than emergency escape is not acceptable.





Centers for Disease Control  
National Institute for Occupational  
Safety and Health - ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

March 10, 1986

Letter to All Respirator Manufacturer's

Through: Director, DSR *JAM*

NIOSH has recently received numerous inquiries from respirator manufacturers on certification requirements for a combination pressure-demand supplied air respirator (SAR) and escape high efficiency particulate respirator. NIOSH will use the same procedures as we have in the past for approving other combination respirators, such as continuous flow SAR/gas mask respirators. The current regulations contain the prescribed mechanisms for approving combinations. The regulations, 30 CFR 11: 11.63(b), state "where a combination respirator is assembled in this part each of the individual respirator types which have been combined shall, as applicable, meet the minimum requirements for such combination respirators. . . ." and that they "will be classified by the type of respirator in the combination which provides the least protection to the user". Since this combination respirator will be used in the airline mode (except for emergency egress when the airflow is shut off) and since the normal requirements for high efficiency particulate respirators are based on approval for routine use, NIOSH has determined that:

1. The combination, when used in the airline mode must meet all of the performance requirements for pressure-demand SAR (Subpart J); and
2. The combination, when used in the filtering escape mode, must meet the penetration requirements of high efficiency respirators (11.1140-11).

In addition, in order to assure that any combination respirator SAR and air purifying respirator offers the maximum protection, NIOSH, in accordance with 11.63(c) and (d), has been requiring that:

1. The combination incorporate a check valve to help assure that when in the supplied air mode, no air can be drawn through the air purifying element and no high pressure air can be forced back through the air purifying element; and
2. The combinations incorporate a valve (i.e., a spring or other type pressure activated valve) which will close when the airline is disconnected so that contaminated air cannot be drawn through the hose when using the air purifying element.

As required by Part 11, the approval classification will be that of the high efficiency respirator. The wording will be the same as established for continuous flow SAR/Type H approval as follows: Approved for respiratory



protection against dusts, fumes, and mists having a time weighted average less than 0.05 milligram per cubic meter and radionuclides. The airline respirator can be used only when the respirator is supplied with respirable air.

The limitations placed on the approval shall be the same as those already established for Type C SAR and high efficiency respirators with the exception of the escape only limitation for use of the filtering mode. The limitations are as follows:

1. Not for use in atmospheres immediately dangerous to life or health.
2. Not for use in atmospheres less than 19.5 percent oxygen.
3. In making renewals and repairs, parts identical with those furnished by the manufacturer under the pertinent approval shall be maintained.
4. Refer to approval label and instruction and maintenance manuals for additional information on use and maintenance of these respirators.
5. Follow manufacturer's instructions for changing filters.
6. Use only the hose lengths and pressure ranges specified on the approval label.
7. The respirator shall be selected, fitted, used and maintained in accordance with Mine Safety and Health Administration and other applicable regulations.
8. When airflow is cut off, switch to filter and immediately exit to clean air.

These requirements and limitations will be the minimum requirements for all combination pressure-demand SAR/escape high efficiency particulate respirators. As with all of our approval evaluations, if a specific design necessitates further testing to assess the effects on a wearer's safety and health, NIOSH will notify the manufacturer of that design.

Sincerely yours,

  
Nancy J. Bollinger, Chief  
Certification Branch  
Division of Safety Research



July 3, 1986

Centers for Disease Control  
National Institute for Occupational  
Safety and Health - ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

Letter to Users of Self-contained Breathing Apparatus Incorporating  
Luxfer CTC/DOT-E 7235 4500 Fiber-glass-wrapped Aluminum Cylinders

SUBJECT: Danger of rupture of cylinders without steel neck rings, reported by:  
U. S. Department of Transportation (DOT), National Institute for  
Occupational Safety and Health (NIOSH), and Mine Safety and Health  
Administration (MSHA)

NIOSH has issued several Notices to users of MSHA/NIOSH-approved self-contained breathing apparatus, warning of the potential rupture with explosive force of fiber-glass-wrapped aluminum cylinders marked CTC/DOT-E 7235 4500, which have not been retrofitted with steel neck rings.

Installation of a steel neck ring on a CTC/DOT-E 7235 4500 cylinder will prevent cylinder rupture. Rupture of the cylinder could cause injury or even death to the user. Only a few ruptures of cylinders without neck rings have been reported, but those ruptures have caused considerable property damage. One person has been injured by a cylinder rupture.

Cylinders marked CTC/DOT-E 7235 2216 do not require addition of neck rings.

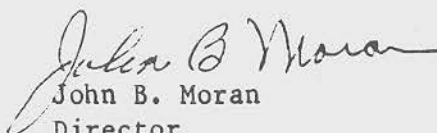
NIOSH has asked Luxfer USA, Ltd., the manufacturer of CTC/DOT-E 7235 4500 cylinders, to prepare and furnish NIOSH with a list of users who have been identified as having such cylinders but who have not returned them for installation of a steel neck ring. Your name appears on that list.

If you have not done so, please call Luxfer USA, Ltd., 714-684-5110, or write P. O. Box 5300, Riverside, CA 92517, and arrange to have a steel neck ring installed on each CTC/DOT-E 7235 4500 cylinder. The CTC/DOT marking appears on the cylinder label.

Transportation of full and/or filling of CTC/DOT-E 7235 4500 cylinders without steel neck rings is prohibited by DOT. The MSHA/NIOSH-approval of any self-contained breathing apparatus equipped with a CTC/DOT-E 7235 4500 cylinder without a steel neck ring, was withdrawn, effective October 1, 1985.

Thank you for your cooperation in this matter. Please call (304-291-4595/FTS 923-4595) or write me if you have any questions.

Sincerely yours,

  
John B. Moran  
Director  
Division of Safety Research



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control  
National Institute for Occupational  
Safety and Health - ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

JULY 21, 1986

LETTER TO ALL RESPIRATOR MANUFACTURERS

On March 10, 1986, in accordance with 11.63(b), (c) and (d), NIOSH sent a letter to all respirator manufacturers notifying them of the criteria NIOSH will utilize for evaluation and approval of combination pressure-demand supplied air respirators (SAR) and escape high efficiency particulate filter respirators. The applicable requirement for the filtering escape mode was listed as the penetration requirements of high efficiency respirators (11.140-11). Since the filtering mode would not be certified for routine use, the resistance requirements for high efficiency particulate respirators were not considered applicable.

Since receipt of that letter, several manufacturers have inquired about the maximum acceptable inhalation breathing resistance for the filtering mode. This issue is particularly relevant because NIOSH also required in the March 10, 1986, letter that the combination respirator incorporate a check valve to assure that, when in the supplied air mode, no air could be drawn through or forced back through the filter. Depending upon the design of the check valve, inhalation resistance could be substantially increased by this requirement.

After reviewing the criteria for exhalation and inhalation resistance for supplied-air respirators and escape air purifying respirators in 30 CFR 11, and after reviewing the literature on acceptable levels for breathing resistance, NIOSH has determined that the following criteria must be met in order to assure the device will be safe for use by the wearer:

1. The combination when used in the airline mode must meet the resistance requirements of the Type C SAR (11.124-14).
2. The combination when used in the filtering mode and tested mounted on a test fixture with a continuous testing air flow rate of 85 liters per minute must not exceed 85 mm of water for inhalation resistance and 88 mm of water for exhalation resistance. In addition, the total pressure drop across the apparatus (pressure swing) when also measured at 85 Lpm shall not exceed 170 mm of water.

After reviewing the potential uses and designs of this combination respirator, NIOSH has also seen the need for further design and/or use instructions for this combination device in order to assure its safety and reliability as follows:

1. The user instructions should state that training on the combination unit include a brief familiarization period where the employee is allowed to wear the device in the filtering mode. This will allow the employee to recognize the higher breathing resistance associated with filtering mode and decrease the likelihood of the user panicking when airflow is shut off.

Page 2 - Letter to All Respirator Manufacturers

2. (a) A cover or other means of protecting the filter from moisture, contamination or physical damage should be incorporated in the respirator and the user instructions should include adequate instructions for inspection and replacement of the filter (i.e. replace filter after it has been used for egress from a contaminated atmosphere or if there is physical damage to the filter...).

OR

(b) The user instructions will specify a specific use period and will contain adequate instructions for inspection and replacement of the filter (i.e., replace filter after it has been used for egress from a contaminated atmosphere and every three days if not used ...). If the replacement frequency recommended exceeds one shift, then data demonstrating that the filter remains efficient for the specified use period under conditions representing its anticipated use should be submitted to NIOSH as part of the approval application.

Since the criteria in the March 10, 1986, letter that no high pressure air could be forced back through the filter was intended to ensure positive pressure in the facepiece during supplied air operation and to eliminate the possibility of eventual filter degradation from this airflow, it has been determined that if the pressure in the facepiece remains positive in the airline mode when tested in accordance with 11.124-14 (b), and if the manufacturer's user instructions incorporate adequate filter replacement directions then airflow back through the filter should cause no loss of respiratory protection to the user and would be accepted by NIOSH.

All other requirements of the March 10, 1986, letter including the requirement that no air can be drawn inward through the filter when in the supplied air mode, are still applicable.

  
Nancy J. Bollinger, Chief,  
Certification Branch  
Division of Safety Research

August 11, 1986

## RESPIRATOR USERS NOTICE

Centers for Disease Control  
National Institute for Occupational  
Safety and Health — ALOSH  
944 Chestnut Ridge Road  
Morgantown, WV 26505-2888

Inspection of Self-contained Breathing Apparatus  
For Breathing-gas Pressure

The National Institute for Occupational Safety and Health (NIOSH) issued a Respirator Users Notice on January 17, 1986, advising users of Mine Safety and Health Administration (MSHA)/NIOSH-certified self-contained breathing apparatus (SCBA) to inspect fiberglass-wrapped aluminum cylinders at least weekly for breathing-gas cylinder pressure, and discussing the problem of fiber-glass-wrapped aluminum cylinder rupture.

NIOSH issued a Respirator Users Notice on March 15, 1983, advising users of Robertshaw Model 5000 5-minute compressed-air escape SCBA of reports of gradual leakage of air from those respirators. The Robertshaw Model 5000 is equipped with a high-pressure tubing-coil breathing-air reservoir.

NIOSH has identified the following sources of breathing-gas pressure leakage from SCBA, excluding self-contained self rescuers:

| <u>Source of Leakage</u>                                  | <u>No. of Reports to NIOSH</u> |
|-----------------------------------------------------------|--------------------------------|
| o Cylinder rupture                                        | 4                              |
| o Cylinder neck cracking                                  | 192                            |
| o Leakage at the cylinder to<br>cylinder valve connection | 7                              |
| o Leakage at tubing-coil<br>reservoir fittings            | 50                             |

On the basis of presently-available information concerning the potential for breathing-gas leakage, NIOSH believes that users of all MSHA/NIOSH-certified SCBA should follow these minimum safety recommendations:

1. Determine that each DOT-E 7235 4500 cylinder is equipped with a steel neck ring to prevent cylinder rupture (DOT-E 7235 2216 and 3000 and other cylinders do not require neck rings).
2. SCBA, except SCSR, which are used infrequently should be visually checked once a week and all SCBA should be checked before donning, for loss of breathing-gas pressure. Failure to conduct such examination could result in a hazardous situation if undetected pressure loss has occurred.
3. SCSR should be inspected as prescribed by MSHA and the SCSR manufacturer.
4. If leakage of breathing gas from an MSHA/NIOSH-certified SCBA or SCSR is observed, have that SCBA or SCSR examined immediately by a qualified service person. If the breathing-gas container is found to be the source of leakage, advise the manufacturer, NIOSH and MSHA (SCSR only) of the problem.

More

Cracking of Aluminum Cylinders

The January 17, 1986, Notice also reported the incidence of neck cracking of certain fiber-glass-wrapped aluminum cylinders. The following is a clarification and summary of that report:

NIOSH has received reports of cracks developing in necks of the following fiber-glass-wrapped aluminum cylinders:

DOT-E 7235 2216 cylinders made before January, 1983

DOT-E 7235 4500 cylinders

DOT-E 8059 4500 cylinders made before June, 1984 for

SCBA other than USD

DOT-E 8059 4500 cylinders made before January 1985 for

USD SCBA

NIOSH has also received preliminary reports of cracks developing in the following unwrapped aluminum cylinders:

DOT-SP 6498 2216 cylinders

Names and Addresses of Manufacturer's Contacts

Change: Mr. Jay Parker, Pulmosan Safety Equipment Corp., 30-48 Linden Place, Flushing, NY 11354

To: Mr. Robert Bischler, Pulmosan Safety Equipment Corp., C/O Willson Safety Products, PO Box 622, Reading, PA 19603

Change: Mr. Joel Kaufman, Glendale Optical Company, 130 Crossways Park Drive, Woodbury, NY 11797

To: Mr. Jay Parker, Glendale Optical Company, 130 Crossways Park Drive, Woodbury, NY 11797

  
John B. Moran  
Director  
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