



# NIOSH Warns Workers About Explosive Respirator Cylinders

NIOSH UPDATE:

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A 47-year-old firefighter died recently when the gas cylinder in his respirator exploded as he was refilling it with compressed air. The worker was killed when the neck portion of the cylinder separated and struck him in the upper chest and neck. According to the National Institute for Occupational Safety and Health (NIOSH), this is not the first incident in which this model cylinder, the DOT-E 7235 4500 PSI, has exploded.

The cylinder are used on self-contained breathing apparatus by firefighters, hazardous materials (hazmat) workers, emergency medical service personnel, and workers throughout the chemical and manufacturing industries.

The Institute has received several reports of these cylinders leaking or exploding, as a result of metal fatigue in the neck area. Recognizing the hazard, NIOSH and the U.S. Department of Transportation (DOT) in October 1985, began requiring that these cylinders be retrofitted with a steel reinforcing ring. The cylinder causing this death was not retrofitted and was in service beyond its maximum 15-year service life. NIOSH urges all workers using these cylinders to make sure that they are both retrofitted and within the approved service life.

"It is a travesty that the very devices used to protect workers are in fact causing injury and death," said NIOSH Director, Dr. J. Donald Millar. "These cylinders are critical for worker safety in extremely hazardous situations. We must ensure that workers can rely on their effectiveness and their safety."

NIOSH estimates that as many as 8,000 of these cylinders may remain in service without the required retrofit. Furthermore, the potential for rupture may increase as the cylinder nears the end of its service life. NIOSH urgently requests your assistance in informing workers who use this cylinder of the potential hazard and the prevention measures.

If you are using a compressed gas cylinder,

NIOSH urges you to

take the following precautions:

- Immediately inspect all compressed gas cylinders in your possession or your work area.
- Immediately remove from service any DOT-E 7235 4500 PSI cylinder that does not have a steel reinforcing ring on the neck area.
- Immediately remove from service any DOT-E 7235 4500 PSI cylinder that has exceeded the 15-year service life. This life can be determined by the earliest date stamped on the neck of the cylinder. Pressure (i.e. hydrostatic) retesting cannot extend service life beyond 15 years.
- Identify the last hydrostatic retest date stamped on the neck and remove the cylinder from service if the date is more than 3 years old.
- Treat all compressed gas cylinders with caution and follow the manufacturer's recommended safe work practices when refilling (i.e. charging), handling, and disposing of any charged cylinders.

NIOSH urgently requests our assistance in bringing the information and recommendations in this UPDATE to the attention of employers, workers, and volunteers who may be exposed to DOT-E 7235 4500 PSI cylinders. Although two lower pressure cylinders, the DOT-E 7235 2216 PSI and DOT-E 7235 3000 PSI cylinders, are identical in appearance, there have been no reported problems with these devices.

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