

NIOSH

P.A.T.

PROFICIENCY ANALYTICAL TESTING PROGRAM

U.S. Department of Health and Human Services
Public Health Service
Centers for Disease Control
National Institute for Occupational Safety and Health

THE PAT PROGRAM

The National Institute for Occupational Safety and Health (NIOSH) through its Proficiency Analytical Testing (PAT) Program provides reference samples to industrial hygiene laboratories. Although one objective of PAT is to determine the analytical competence of participating industrial hygiene laboratories, the primary objective of the Program is to assist the participating laboratories in improving analytical performance.

Sample kits are mailed quarterly and contain up to 15 filters and 10 charcoal tubes. Five filters contain silica; five asbestos; and five combined metals of lead, cadmium, and zinc. The charcoal tubes contain one, or two organic solvents which are rotated each round from the following: benzene, carbon tetrachloride, chloroform, 1,2-dichloroethane, methylene chloride, methyl chloroform, methyl ethyl ketone, methyl isobutyl ketone, p-dioxane, toluene, trichloroethylene, and o-xylene.

Not all laboratories analyze all contaminants included in the PAT Program, but each laboratory is required to analyze and submit results for all reference samples which are similar to the analytical workload of the laboratory.

Analytical methods to be followed are not specified in the Program; the procedure used for PAT samples should be the same procedure used by the laboratory in its normal operations for similar types of samples. Laboratories have 15 working days after receipt of samples to mail results. Except in instances where analytical problems are found, PAT samples should be rotated among all analysts performing similar field analysis in the laboratory.

Results are evaluated, laboratories are screened for those with questionable performance, and each laboratory is notified of their status prior to receipt of the next round of samples. To assist laboratories in making corrections and modifications prior to the next official round, repeat samples are available from the Chemical Reference Laboratory. Details of the statistical procedures used and examples of output are provided upon enrollment in the Program.

DISCLAIMER

Mention of company name or product does not constitute endorsement by the National Institute for Occupational Safety and Health.

TECHNICAL AND QUALITY ASSURANCE CONSULTATION

The NIOSH Chemical Reference Laboratory provides a limited consultation site visit program for Federal, state, and local government laboratories participating in the PAT program. The purpose of the program is to assist government laboratories in quickly correcting specific analytical problems identified by the PAT program or in developing a management plan for meeting the requirements for AIHA Laboratory Accreditation.

For further information contact the NIOSH Chemical Laboratory.

LABORATORY ACCREDITATION

The American Industrial Hygiene Association (AIHA) operates a Laboratory Accreditation Program which requires participation in the NIOSH PAT Program. The AIHA Laboratory Accreditation Program is designed to evaluate personnel qualifications, internal quality control procedures, equipment, facilities, and recordkeeping procedures by site visitation of laboratories in addition to evaluating proficiency testing performance. A pamphlet, "A Plan for Accreditation of Industrial Hygiene Laboratories," describing the AIHA Laboratory Accreditation Program is available by contacting: Coordinator of Laboratory Accreditation, American Industrial Hygiene Association, 475 Wolf Ledges Parkway, Akron, Ohio, 44311; Telephone: (216) 762-7294.

PAT PROGRAM ELIGIBILITY

Due to budgetary and manpower limitations, participation in the PAT program is restricted to:

1. Government laboratories* (local, state, and Federal),
2. University laboratories* (public and private),
3. Private laboratories providing analytical services under government contract, upon request of the government agency*
4. Private laboratories participating in the AIHA Laboratory Accreditation Program.** (Enrollment in PAT is automatic with receipt of the accreditation application by AIHA. No additional registration is required.)

*Proficiency testing is fully funded by NIOSH at no cost to participants.

**Proficiency testing is partially funded by NIOSH with the remainder funded by the AIHA Laboratory Accreditation Program.

OTHER PROFICIENCY TESTING PROGRAMS

Other environmental and clinical proficiency testing programs operated by the Federal Government may be useful to some industrial hygiene laboratories. Participation in these programs is not restricted. These include:

The Center for Disease Control (CDC) has programs in microbiology, immunology, immunohematology, and chemistry (includes blood lead) with a \$25.00 annual fee per program. Contact: Proficiency Testing Branch, Center for Disease Control, Bldg. 6, Room 315, Atlanta, Georgia, 30333; Telephone: (404) 236-3849.

The Environmental Protection Agency (EPA) has programs in microbiology, radiochemistry, water pollution and water supply, interlab audits for air sources ambient air analyses, and bulk asbestos identification at no charge. Contact: U.S. EPA, Environmental Monitoring and Support Laboratory, Research Triangle Park, North Carolina, 27711; Telephone: (919) 541-2196.

NBS STANDARD REFERENCE MATERIALS (SRM'S)

Obtaining reliable reference standards for calibration and internal quality control is critical to any laboratory program. Over 900 SRM's are available from the National Bureau of Standards (NBS). These include analyzed gases and other environmental SRM's as well as industrial hygiene SRM's.

Industrial hygiene SRM's currently available include:

- SRM 2661 Benzene on Charcoal
- SRM 2662 m-Xylene on Charcoal
- SRM 2663 p-Dioxane on Charcoal
- SRM 2664 1,2 Dichloroethane on Charcoal
- SRM 2665 Chloroform on Charcoal
- SRM 2666 Trichloroethylene on Charcoal
- SRM 2667 Carbon Tetrachloride on Charcoal
- SRM 2671 Freeze Dried Urine Certified for Fluorine
- SRM 2672 Freeze-Dried Urine Certified for Mercury
- SRM 2675 Beryllium on Filter Media
- SRM 2676 Metals (Lead, Cadmium, Zinc, Manganese) on Filter Media
- SRM 2679 Quartz on Filter Media

For price lists, ordering instructions, or the Catalog of NBS Standard Reference Materials, contact: Office of Standard Reference Materials, Room B311, Chemistry Building, National Bureau of Standards, Washington, D.C. 20234; Telephone: (301) 921-2045.

NIOSH TRAINING COURSES

NIOSH provides a wide variety of short training courses. Courses of special interest to laboratory personnel include:

NIOSH 582— Sampling and Evaluating Airborne Asbestos Dust

NIOSH 587— Industrial Hygiene Laboratory Quality Control

NIOSH 597— How to Write a Laboratory Quality Control Manual

For information concerning training courses, contact: NIOSH Division of Training, Manpower Development, 4676 Columbia Parkway, Cincinnati, Ohio 45226; Telephone: (513) 684-8225.

PUBLICATIONS

Several publications are available that are useful for laboratory and field reference. These include:

- NIOSH Manual of Analytical Methods
Volume I — DHEW Pub. No. 77-157A Price: \$8.75
GPO Stock No. 017-033-00267-3
- Volume II — DHEW Pub. No. 77-157B
GPO Stock No. 017-033-00260-6
Price: \$9.75
- Volume III — DHEW Pub. No. 77-157C
GPO Stock No. 017-033-00261-4
Price: \$9.00
- Volume IV — DHEW Pub. No. 78-175
GPO Stock No. 017-033-0317-3
Price: \$7.25
- Volume V — DHEW Pub. No. 79-141
GPO Stock No. 017-033-00349-1
Price: \$9.00
- OSHA Technical Information — OSHA M&CL
Calibration Systems
(Calibration of Field Equipment)

For NIOSH publications, contact: Supt. of Documents, Government Printing Office, Washington, D.C. 20402.

For OSHA publications, contact: OSHA, Directorate of Technical Support, Maintenance and Calibration Laboratory, Cincinnati, Ohio 45202.

PAT PROGRAM INFORMATION

For more information on the PAT program, contact:

NIOSH
Chemical Reference Laboratory R-3
4676 Columbia Parkway
Cincinnati, Ohio 45226
Tel: (513) 684-4357

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
CENTERS FOR DISEASE CONTROL
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
ROBERT A. TAFT LABORATORIES
4676 COLUMBIA PARKWAY, CINCINNATI, OHIO 45226

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE. \$300

Third Class Mail



POSTAGE AND FEES PAID
U.S. DEPARTMENT OF HHS
HHS 396