Appendix A: OSHA Fact Sheet, *Occupational Exposure to Hazardous Chemicals in Laboratories*

OSHA® FactSheet

Laboratory Safety OSHA Laboratory Standard

OSHA's Occupational Exposure to Hazardous Chemicals in Laboratories standard (29 CFR 1910.1450), referred to as the Laboratory standard, covers laboratories where chemical manipulation generally involves small amounts of a limited variety of chemicals. This standard applies to all hazardous chemicals meeting the definition of "laboratory use" and having the potential for worker exposure.

Hazardous chemicals present physical and/or health threats to workers in clinical, industrial, and academic laboratories. Hazardous laboratory chemicals include cancer-causing agents (carcinogens), toxins that may affect the liver, kidney, or nervous system, irritants, corrosives, and sensitizers, as well as agents that act on the blood system or damage the lungs, skin, eyes, or mucous membranes. OSHA rules limit all industry exposures to approximately 400 substances.

Elements of the Laboratory Standard

This standard applies to employers engaged in laboratory use of hazardous chemicals.[1]

- "Laboratory" means a facility where the "laboratory use of hazardous chemicals" occurs. It is a workplace where relatively small quantities of hazardous chemicals are used on a non-production basis.
- "Laboratory use of hazardous chemicals" means handling or use of such chemicals in which all of the following conditions are met:
  - Chemical manipulations are carried out on a "laboratory scale" (i.e., work with substances in which the containers used for reactions, transfers, and other handling of substances is designed to be easily handled by one person);
  - Multiple chemical procedures or chemicals are used;
  - The procedures involved are not part of a production process, nor do they in any way simulate a production process; and
  - "Protective laboratory practices and equipment" are available and in common use to minimize the potential for worker exposure to hazardous chemicals.
- Any hazardous chemical use which does not meet this definition is regulated under other standards. This includes other hazardous chemical use within a laboratory. For instance:
  - Chemicals used in building maintenance of a laboratory are not covered under the Laboratory standard.
  - The production of a chemical for commercial sale, even in small quantities, is not covered by the Laboratory standard.
  - Quality control testing of a product is not covered under the Laboratory standard.
- If the Laboratory standard applies, employers must develop a Chemical Hygiene Plan (CHP). A CHP is the laboratory's program which addresses all aspects of the Laboratory standard.
  - The employer is required to develop and carry out the provisions of a written CHP.
  - A CHP must address virtually every aspect of the procurement, storage, handling, and disposal of chemicals in use in a facility.
- Primary elements of a CHP include the following:
  - Minimizing exposure to chemicals by establishing standard operating procedures, requirements for personal protective equipment, engineering controls (e.g., chemical fume hoods, air handlers, etc.) and waste disposal procedures.
  - For some chemicals, the work environment must be monitored for levels that require action or medical attention.
  - Procedures to obtain free medical care for work-related exposures must be stated.

- The means to administer the plan must be specified.
- Responsible persons must be designated for procurement and handling of Material Safety Data Sheets, organizing training sessions, monitoring employee work practices, and annual revision of the CHP.

[1]**Note:** The scope of the Formaldehyde standard (29 CFR 1910.1048) is not affected in most cases by the Laboratory standard. The Laboratory standard specifically does not apply to formaldehyde use in histology, pathology, and human or animal anatomy laboratories; however, if formaldehyde is used in other types of laboratories which are covered by the Laboratory standard, the employer must comply with 29 CFR 1910.1450.

Additional Information

The following OSHA Interpretations of the Laboratory standard provide additional information:

- Labeling Requirements under the HAZCOM and Laboratory standards; use of safe needle devices. (2001, January 11). Available at: www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=23781. Also, for labeling information, refer to the Laboratory Safety QuickCard.
- Coverage of various types of laboratories by the Laboratory standard. (1991, February 8). Available at: www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=20190.
- The Laboratory standard does not apply to a pharmacy operation mixing cytotoxic drugs. (1990, June 22). Available at: www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=20025.

OSHA's Safety and Health Topics Page entitled Laboratories, provides more detailed information about the Laboratory standard and is available at: www.osha.gov/SLTC/laboratories/index.html.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; the teletypewriter (TTY) number is (877) 889-5627.

For assistance, contact us. We can help. It's confidential.

OSHA FS-3464 8/2011
DSG