Chapter 1: Reviewing the OSHA Laboratory Standard

What is the OSHA Laboratory Standard?

Officially titled “Occupational Exposure to Hazardous Chemicals in Laboratories, the OSHA Lab Standard was developed to address health hazards unique to laboratories. In fact, for laboratories, it supersedes requirements from other OSHA health standards (in 29 CFR part 1910, subpart Z) with the following exceptions:

- If a worker is exposed to a chemical with an established Permissible Exposure Limit (PEL) or action level, then the exposure must be maintained below that level as written in the applicable standard;
- If another OSHA health standard specifies that skin and eye contact is prohibited, then that requirement will apply to laboratory workers;
- If the action level or PEL is routinely exceeded for an OSHA regulated substance that has required exposure monitoring and medical surveillance, then those requirements will apply. For example there is a special standard for formaldehyde exposure.

Where can I find the full text of these regulations?

To see the full text of both the federal and state versions of the OSHA Lab Standard, visit the following internet sites:

- [http://www.dir.ca.gov/title8/5191.html](http://www.dir.ca.gov/title8/5191.html)

How does OSHA define “Laboratory”?

A laboratory is "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".

How does OSHA define “Laboratory Scale”?

Laboratory scale is “work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person”. This definition excludes those workplaces whose function is to produce commercial quantities of materials.

How does OSHA define “Laboratory Use”?

Laboratory use is “handling or using hazardous chemicals that meet all of the following conditions:

- Chemical manipulations are carried out on a “laboratory scale”;
- Multiple chemical procedures or chemicals are used;
- The procedures involved are not part of a production process, nor in any way simulate a production process; and
- Protective laboratory practices and equipment are available and in common use industry-wide to minimize the potential for employee exposure to hazardous chemicals.”
How does the OSHA Lab Standard define “Hazardous Chemical”?

A hazardous chemical is a “chemical for which there is statistically significant evidence, based on at least one study, conducted in accordance with established scientific principles, that acute or chronic health effects may occur in exposed employees”. Chemicals with potential adverse health effects include carcinogens, sensitizers, reproductive toxins, hepatotoxins (liver), nephrotoxins (kidney), neurotoxins (CNS), and hematopoietic toxins (blood).

How do chemicals with “Physical Hazards” fit into the above definition?

A chemical is a physical hazard if it is unstable at room temperature, reactive with water or air, flammable, or has some other property that can cause physical damage to persons or property. Hazardous chemicals with physical hazards are covered under OSHA’s Hazard Communication Standard (Employee Right-to-Know) and other OSHA standards that apply to specific situations. The OSHA Lab Standard generally does not supersede any OSHA standards that cover physical hazards.

Why is a Chemical Hygiene Plan necessary?

The OSHA Lab Standard requires that employers develop and carry out the provisions of a written Chemical Hygiene Plan which is “capable of protecting employees from health hazards associated with hazardous chemicals in that laboratory and capable of keeping exposures below the limits” specified in Title 8, CCR, Group 16, Section 5139 et seq., of the General Industry Safety Orders.

This is a performance-based standard based, in part, on the book, “Prudent Practices in the Laboratory”* prepared by a National Research Council committee. Performance-based means that the employer is free to develop a customized program that protects the health of its laboratory workers as long as the minimum requirements in the OSHA Lab Standard are met.

* Prudent Practices in the Laboratory, Handling and Disposal of Chemicals

Committee on Prudent Practices for Handling, Storage, and Disposal of Chemicals in Laboratories.
Board on Chemical Sciences and Technology
Commission on Physical Sciences, Mathematics, and Applications
National Research Council

Note: A review copy is available from the COSE Health & Safety Specialist, x8-6892.