

Chemical Hygiene Plan New Employee Training



OSHA's Laboratory Standard

The OSHA Laboratory Standard (issued 1990)

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.

General Principles

- # **Minimize Exposure:** Precautions for handling all laboratory chemicals should be adopted. The Permissible Exposure Limits of the Occupational Safety and Health Administration (OSHA) and the Threshold Limit Values of the American Conference of Governmental Industrial Hygienists shall not be exceeded.
 - # **Don't under estimate risk:** Even for substances with no known significant hazard, exposure should be minimized.
 - # **Control exposure:** Substitute less toxic materials when practical. Prevent chemical vapors and mists escaping into the atmosphere by the use of hoods and other ventilation devices. Where other controls do not adequately control the hazard, wear appropriate personal protective equipment as a last resort.
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Laboratory Users Must....


- # Know, understand and follow the CMAVE Chemical Hygiene Plan
- # Abide by SOPs (standard operating procedure) and current JHA (job hazard analysis)
- # Report unsafe/unhealthy conditions
- # Obey all caution/warning signs and orders to evacuate the building
- # Report all injuries to your supervisor
- # Do your part to keep CMAVE safe and secure



Chemical Common Sense

- # Date new chemicals as they come in
- # Record date on the label when opened
- # Replace torn, defaced or faded labels
- # Label secondary containers using GHS labels





One objective of the Laboratory Standard is for workers to minimize risk to chemical hazards.

Name some ways we just discussed to accomplish this.



Hazard communication

- # **Secondary labeling** is required every time a chemical is transferred from its original container to another container, Secondary containers must include:
 - # Product Name
 - # Hazardous Chemicals
 - # Appropriate Hazard Warnings: words, pictures, symbols
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Hazard label: the minimum

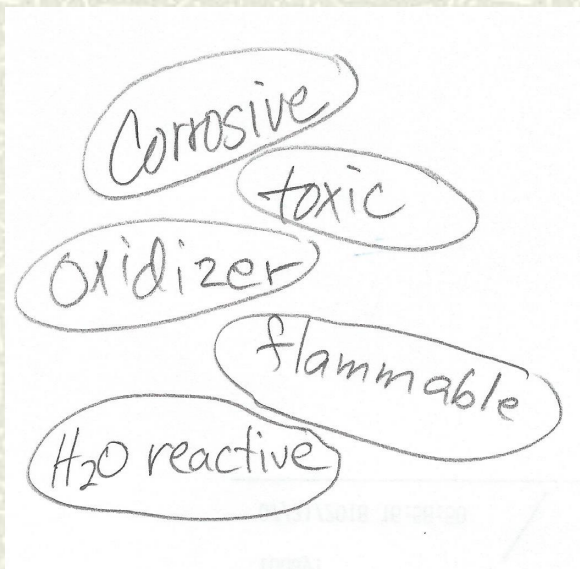
- # Name of chemical
- # Identify the hazard



Bleach Corrosive

Chemical Storage

- # Separate groups by hazard class to minimize risk of unwanted chemical reactions
- # Store hazardous liquids below eye level




Oxidizers



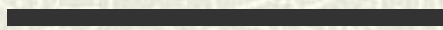
These chemicals provide a source of oxygen and will initiate or promote combustion

- Gases: fluorine, chlorine, oxygen
- Liquids: hydrogen peroxide, nitric acid, perchloric acid
- Solids: nitrites, nitrates, perchlorates, peroxides

Oxidizers must be stored separately from other materials



After transferring the flammable solvent hexane into a secondary container, the minimum information that must be on the label is:



Personal Protective Equipment

Routes of Exposure

- # Inhalation
- # Absorption through skin
- # Ingestion
- # Injection from glass shards, syringes, used razors



Protecting your sight

- # Safety glasses are designed to protect your eyes from projectiles, not liquid splashes
- # For a potential splash hazard, wear safety goggles



What a spill sees:



Personal Protective Equipment, cont.


Lab users and visitors must wear :

- # ANSI approved eye protection when potential of eye injury exists.
 - # Closed toe shoes
 - # Long pants or long skirt
 - # Lab coats when required
 - # Gloves
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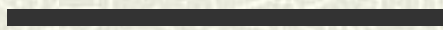
Hygiene practices

General Rules for Working With Chemicals

- # No eating or drinking in the lab
 - # Wash your hands before leaving the lab
 - # Do not wear gloves outside the lab
 - # Do not wear gloves when answering the phone or using a computer
 - # Do not wear your lab coat outside the lab
 - # Never launder your lab coat at home
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You're preparing to pour a corrosive liquid into a funnel. You know from experience that when the liquid hits the funnel, large droplets may splash upward and outward. Describe the PPE you will don to protect yourself.



Ethidium bromide (suspected mutagen)



Requires a logbook that documents weekly surveillance of workspace, faucet handles, door knob.

Know the Locations of Emergency Stations

- # Eyewash station
- # Emergency Shower
- # Fire Blanket
- # Spill Control Kit
- # First Aid Kit
- # Fire Extinguisher/ Fire Alarm.
- # AED Units



Access to Safety Equipment

- # Always provide clear, unobstructed access to fire extinguishers and eyewash/shower stations



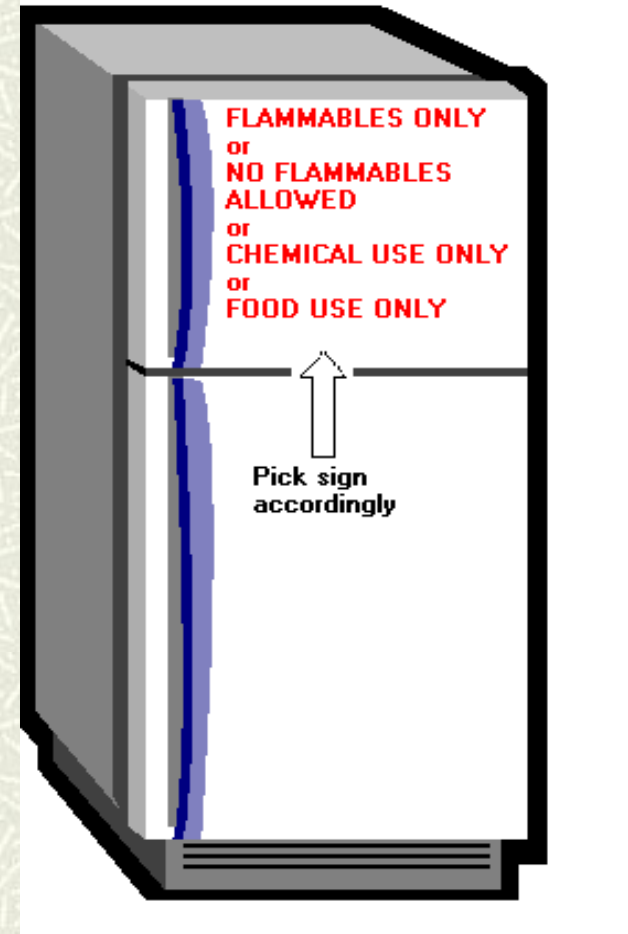
Access to important controls

- # Keep clear access to electrical panels and other controls necessary in an emergency



Refrigerators & Freezers

- # Only “explosion proof/ safe” refrigerators and freezers may be used to store flammables
- # Refrigerators/freezers that are not “explosion proof/ safe” must be labeled **NO FLAMMABLES ALLOWED**
- # Use refrigerator/freezers labeled for “**CHEMICAL USE ONLY**” or “**FOOD USE ONLY**” according to label



Gas Cylinders must be properly secured

Good



Not Good

Chain too low!



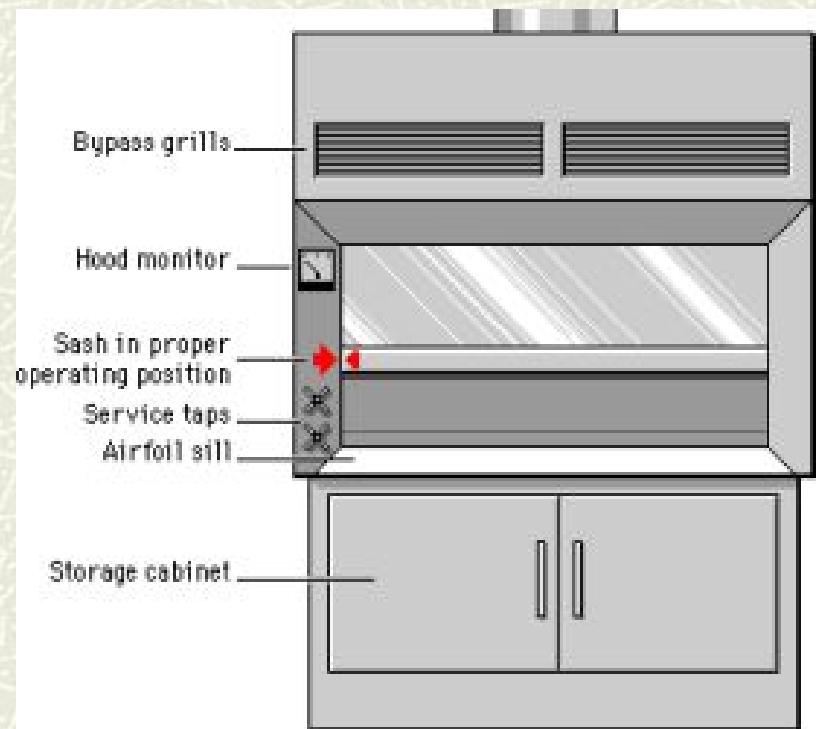
Crushed foot or

worse No restraint!



Chemical Fume Hoods

- # Do not use fume hood for permanent chemical storage
- # Maintain sash height at or below posted level
- # Minimize objects placed near the back to maintain hood efficiency
- # Ideally, all lab doors should be closed to maintain the negative pressure of the laboratory



Occupational Medical Surveillance Program

CMAVE has an Occupational Medical Surveillance program to monitor your health throughout your career. It is confidential, free and voluntary.

