



Laboratory Safety & Health Standard
for Laboratory Specialists & Science Teachers

29 CFR 1910.1450

Purpose of Standard

- To ensure that all employees who work in laboratories are:
 - Informed about the chemicals they use
 - Informed about the risks involved
 - Informed about the procedures to follow to minimize their exposure to these substances

Who is Covered By The Standard?

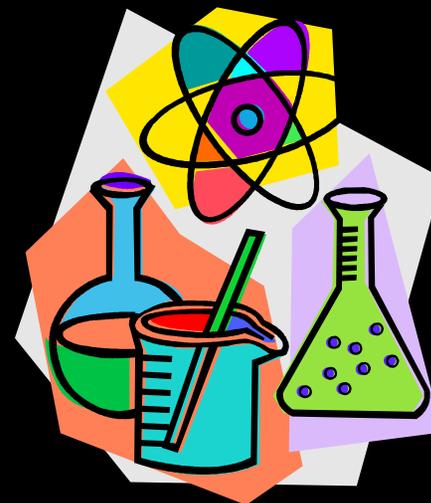
All employees with routine exposure to the laboratory environment:

- Science Teachers
- Laboratory Specialists
- Laboratory Technicians



Which facilities are covered?

- Any school science laboratory where chemicals are used:
 - Elementary School
 - Junior High School
 - High School



Program Responsibility

Office of Occupational Safety & Health
Develops the Chemical Hygiene Plan

Chemical Hygiene Officer/Principal
Completes and enforces the Chemical Hygiene Plan

Employee

- Knows the Chemical Hygiene Plan
- Uses due care while working with laboratory chemicals

Laboratory Safety & Health Standard Requirements

Develop a
Chemical Hygiene Plan

Designate a
Chemical Hygiene Officer

Follow Established Chemical
Permissible Exposure Limits

Employee Exposure
Requirements

Provide
Information & Training

Hazard Identification

Respirator Requirements

Medical Consultations
& Exams

Fume Hood
Requirements

Permissible Exposure Limits (PELs)

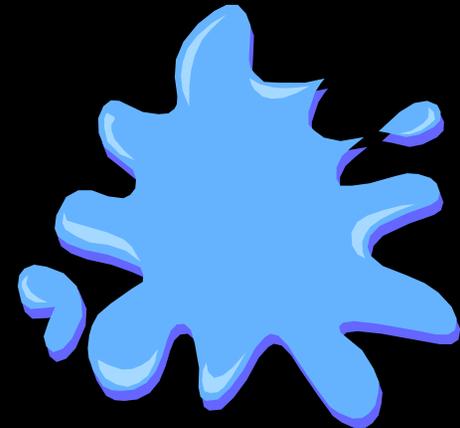
Employee exposure must not exceed specific exposure limits:

▪ Vinyl chloride	▪ Acrylonitrile
▪ Inorganic arsenic	▪ Ethylene oxide
▪ Lead	▪ Formaldehyde
▪ Cadmium	▪ 21 other chemicals
▪ Benzene	

Source: 29 CFR 1910 subpart Z

Employee Exposure Requirements

- Employees' exposure must be measured if PELs are believed to be exceeded
 - Spills or leaks
- If monitoring discloses exposure:
 - Opportunity for medical consultation



Medical Consultation Requirements

- When signs or symptoms of exposure are present
- Done to determine need for medical examination
- Performed by a licensed physician
- At no cost to the employee
- Written opinion from physician



Training Must Include:

1. Methods and observations used to detect the presence of hazardous chemicals
2. Physical and health hazards of chemicals
3. Measures employees can take to protect themselves
4. Details, contents and location of the Chemical Hygiene Plan
5. Notification and training whenever a new hazard is introduced
6. Description of PELs
7. Signs and symptoms of exposure
8. Location and availability of:
 - MSDS
 - Reference materials of chemical hazards
 - Storage
 - Disposal of lab chemicals



TRAINING TO BE PROVIDED:

1. upon initial assignment
2. when new chemicals are used
3. periodically

Respirator Requirements

- Use engineering controls whenever possible
- If respirators are needed to maintain exposures below PELs, they must be provided free of charge to the employee
- All Respiratory Protection Programs must meet the requirements of 29 CFR 1910.134



Engineering controls seek to remove the hazard at its source

Fume Hood Program

- Hoods need to be routinely evaluated to determine if they are working properly
- Specific safety procedures must be employed for particularly hazardous materials
 - Designated work area must be established
 - Use containment devices i.e.:
 - glove boxes, fume hoods



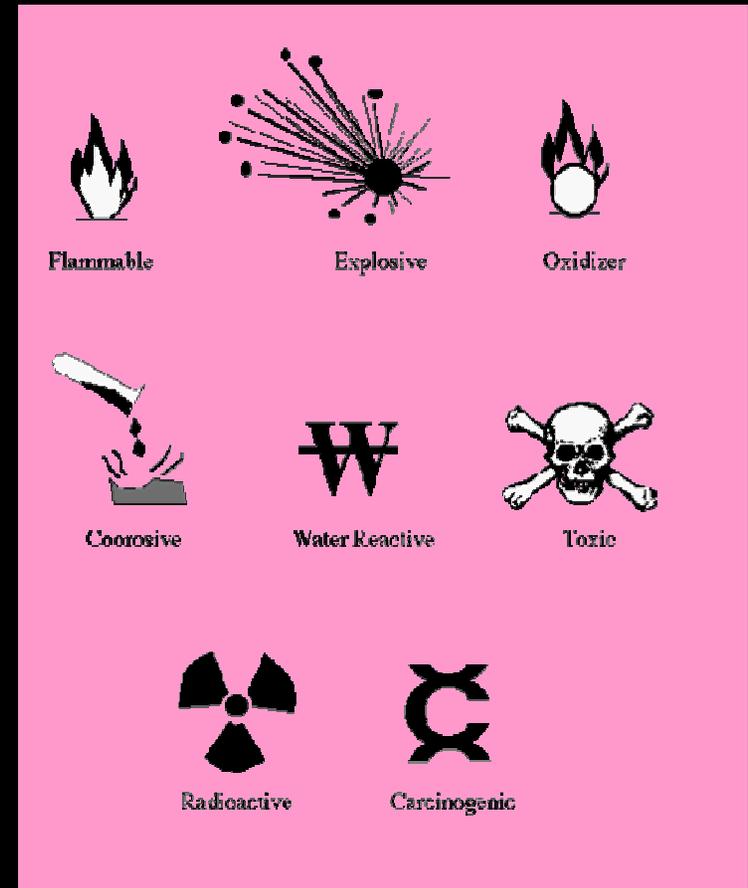
Chemical Inventory

- A chemical inventory must be established and maintained for all chemicals in the lab
- A MSDS must be available for each chemical listed on the chemical inventory



Safe Handling/Special Procedures

- Identify the health and physical hazards
- Develop work procedures to eliminate or minimize hazard



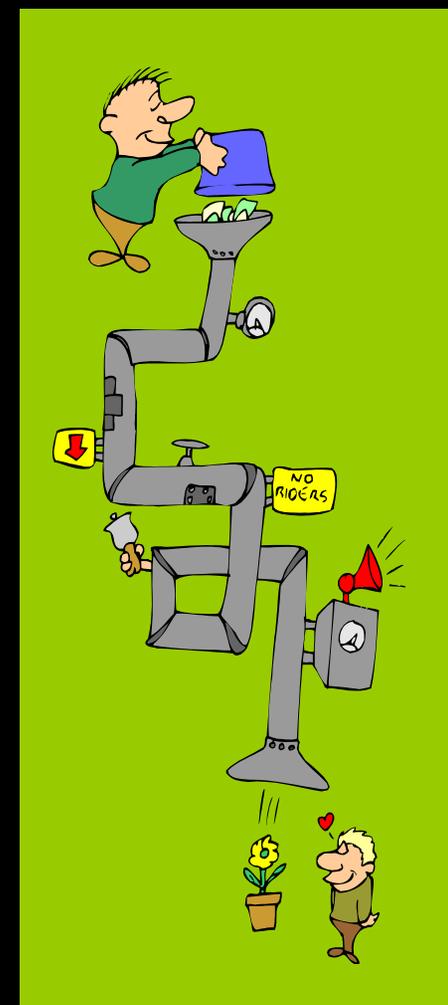
Health Hazards, Special Precautions, Chemical Spills

- Allergens
- Embryotoxins
- Moderate/chronic/acute toxicity
- High chronic toxicity (carcinogens)
- Animal work with high chronic toxicity
- Carcinogens
- Radioactive materials

Use CLEAN for Handling Chemical Spills	
C	Contain the spill
L	Leave the area
E	Emergency : eye wash, shower, medical care
A	Access MSDS
N	Notify a supervisor

Waste Disposal

- Follow local, state, and federal guidelines
- Avoid indiscriminate drain disposal of water soluble compounds
- Do not use hoods for disposal for volatile chemicals
- Use recycling or chemical decontamination whenever possible
- Remove lab waste periodically



Waste Disposal

Laboratory

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graph TD; A[Laboratory] --> B[Custodian  
Completes a work order for removal]; B --> C[Division of School Facilities  
Hazardous Waste Unit  
Removes waste  
718-610-0166];
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Custodian

Completes a work order for removal

Division of School Facilities
Hazardous Waste Unit

Removes waste
718-610-0166

Recordkeeping

Medical Records

Duration of employment + 30 years
Confidential, released with employee's consent

Training Records

Kept on site for 3 years

Industrial Hygiene

Measurements taken to monitor employee exposure

The End