Laboratory Safety

Environmental Health & Safety
Pam Koontz
Employers shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and material safety data sheets.
Employees shall be informed of:

- The requirements of this section;
- Any operations in their work area where hazardous chemicals are present; and,
- The location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals, and material safety data sheets required by this section.
Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);

The physical and health hazards of the chemicals in the work area;
1910.1200(h)(3)(iii)

- The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and,
1910.1200(h)(3)(iv)

- The details of the hazard communication program developed by the employer, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information.
Hazard Assessment CFR 1910.132(d-f)

- Responsibility of the employer
- Determine hazards present
- Select PPE that fits each employee
- Verification
- No defective PPE
- Training
- Monitoring
Eye and Face Protection CFR 1910.133(a)

- When to use it
- What to use
- What about my prescription glasses?
Respiratory Protection CFR 1910.134(a)

- Respirators shall be provided by the employer when such equipment is necessary to protect the health of the employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended.

- Respiratory Protection Program
Hand Protection CFR 1910.138

- When needed
- Selection
- Chemical resistant gloves
  - http://www.chemrest.com/
  - http://www.allsafetyproducts.biz/ (Ref. Info.)
  - http://www.ansellpro.com/ (online chem. hand protection)
Where hazardous chemicals are used in the workplace, the employer shall develop and carry out the provisions of a written Chemical Hygiene Plan which is:

- Capable of protecting employees
- Exposure
- Readily Available
CHP Shall Include CFR 1910.1450(e):

- SOPs
- Control measures
- Protective equipment
- Training
- When approval is needed
- Medical
- CHO
- Particularly hazardous substances
Particularly Hazardous Substances CFR 1910.1450(e)

- Designated area
- Containment devices
- Waste removal
- Decontamination
- Department Head and CHO
- Pregnant?
Employee Information and Training CFR 1910.1450(f)

- Employer responsibility
- When?
- What information?
  - CFR 1910.1450
  - CHP
  - PELs or RELs
  - Exposure symptoms
  - MSDS and other references
Employee Training CFR 1910.1450(f)

- Detecting a spill
- Hazards
- Protection
- CHP
Medical Consultation and Medical Examinations CFR 1910.1450(g)

- Medical attention and follow-up
  - Signs or symptoms
  - Exposure above the action level
  - Spill, leak or explosion

- Who pays for it?
Information Provided to the Physician CFR 1910.1450(g)

- What chemical(s)
- Conditions
- Signs and symptoms
Physician’s Written Opinion
CFR 1910.1450(g)

- Follow-up
- Results
- Medical condition
- Informed patient
- No unrelated information
Hazard Identification CFR 1910.1450(h)

- No removed or defaced labels
- MSDS
Use of Respirators CFR 1910.1450(i)

- Where the use of respirators is necessary to maintain exposure below permissible exposure limits, the employer shall provide, at no cost to the employee, the proper respiratory equipment. Respirators shall be selected and used in accordance with the requirements of 29 CFR 1910.134.
Recordkeeping CFR 1910.1450(j)

- Employee records
- Availability
Eyewash Safety

- Flush them weekly
- Keep area clear
An Obstructed Eyewash
An Unobstructed Eyewash
Eyewash Safety

- Flush them weekly
- Keep area clear
- Keep caps on
- Report any problems
Door Placards

- Keep information current
- For emergency personnel
Door Placard Examples
New Door Placards

<table>
<thead>
<tr>
<th>POTENTIAL HAZARDS</th>
<th>LAB USE</th>
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<tr>
<td>No Hazards</td>
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<tr>
<td>Water Reactive Chemicals</td>
<td>Carcinogenic Agents</td>
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<tr>
<td>Air Reactive Materials</td>
<td>Teratogenic Agents</td>
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<td>Radioactive Materials</td>
<td>Mutagenic Agents</td>
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<td>Biohazards (Class ___)</td>
<td>Laser (s) (clas___)</td>
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<td>Shock/Heat Sensitive Agents</td>
<td>Cryogenics (Cold)</td>
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<td>Compresses Gas Cylinder (s)</td>
<td>Flammables</td>
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<tr>
<td>≥400 Volts Power</td>
<td>High Pressure Equipment</td>
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<td>OTHERS</td>
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LOCATION OF HAZARDOUS WASTE INSIDE THE ROOM

FACULTY OR STAFF TO BE NOTIFIED IN CASE OF PROBLEMS

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OTHER

DATE OF ANNUAL UPDATES:

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UNIVERSITY OF TENNESSEE, KNOXVILLE
Proper Lab Attire

- Shoes
- Clothing
- Lab Coats
- Long Hair
MSDS

- Availability
- Check it out
- What to know
On the Web:

- Go to: www.osha.gov
- Under Laws and Regulations: Standards
- Part 1910 Occupational Safety and Health Standards
  - 1910 Subpart I Appendix B
  - 1910.1200 Appendix E
  - 1910.1450 Appendix A
- Also on home page: under Safety/Health Topics
  - Hazard Communication