Fisher Science Education & The Laboratory Safety Institute's…

LABORATORY SAFETY GUIDELINES

40 Suggestions for a Safer Lab

Steps Requiring Minimal Expense:

1. Have a written safety, health, and environmental affairs (SH&E) policy statement.
2. Organize a departmental SH&E committee of employees, management, faculty, staff, and students that will meet regularly to discuss SH&E issues.
3. Develop an SH&E orientation for all new employees and students.
4. Encourage employees and students to care about their health and safety and that of others.
5. Involve every employee and student in some aspect of the safety program and give each specific responsibilities.
6. Provide incentives to employees and students for safety performance.
7. Require all employees to read the appropriate safety manual. Require students to read the institution's laboratory safety rules. Have both groups sign a statement that they have done so, understand the contents, and agree to follow the procedures and practices. Keep these statements on file in the department office.
8. Conduct periodic, unannounced laboratory inspections to identify and correct hazardous conditions and unsafe practices. Involve students and employees in simulated OSHA inspections.
9. Make learning how to be safe an integral and important part of science education, your work, and your life.
10. Schedule regular departmental safety meetings for all students and employees to discuss the results of inspections and aspects of laboratory safety.
11. Require every prelab/pre-experiment discussion to include consideration of the health and safety aspects.
12. Forbid working alone in any laboratory and working without prior knowledge of a staff member.
13. Don't allow experiments to run unattended unless they are failsafe.
14. When conducting experiments with hazards or potential hazards, ask yourself these questions: *What are the hazards? What are the worst possible things that could go wrong? How will I deal with them? What are the prudent practices, protective facilities, and equipment necessary to minimize the risk of exposure to the hazards?*
15. Require that all accidents (incidents) be reported, evaluated by the departmental safety committee, and discussed at departmental safety meetings.
16. Extend the safety program beyond the laboratory to the automobile and the home.
17. Allow only minimum amounts of flammable liquids in each laboratory.
18. Forbid smoking, eating, and drinking in the laboratory.
19. Do not allow food to be stored in chemical refrigerators.
20. Develop plans and conduct drills for dealing with emergencies such as fire, explosion, poisoning, chemical spill or vapor release, electric shock, bleeding, and personal contamination.
21. Display the phone numbers of the fire department, police department, and local ambulance either on or immediately next to every phone.
22. Store acids and bases separately. Store fuels and oxidizers separately.
23. Maintain a chemical inventory to avoid purchasing unnecessary quantities of chemicals.
24. Use warning signs to designate particular hazards.
25. Require good housekeeping practices in all work areas.
26. Develop specific work practices for individual experiments, such as those that should be conducted only in a ventilated hood or involve particularly hazardous chemicals. When possible, most hazardous experiments should be done in a hood.

Steps Requiring Moderate Expense:

27. Allocate a portion of the departmental budget to safety.
28. Require the use of appropriate eye protection at all times in laboratories and areas where chemicals are transported.
29. Provide adequate supplies of personal protective equipment—safety glasses, goggles, faceshields, gloves, lab coats, and benchtop shields.
30. Provide fire extinguishers, safety showers, eyewash fountains, first aid kits, fire blankets, and fume hoods in each laboratory and test or check monthly.
31. Maintain a centrally located departmental safety library:
    "Safety is Elementary," Markow, Roy, and Kaufman, 2001, Laboratory Safety Institute, 108 pages
    "Model Chemical Hygiene Plan," James A. Kaufman, 2000, Laboratory Safety Institute, 45 pages
    "Safety in School Science Labs," Clair G. Wood, 1995, Kaufman & Associates, 138 pages
    "Safe Science: Be Protected," Kenneth Roy, Laboratory Safety Institute, 2002, 99 pages
    "Handbook of Laboratory Health and Safety, 2nd Edition," Stricoff and Walters, 1990, CRC Press, 336 pages
    "Safety Sense: A Laboratory Guide," Cold Spring Harbor Laboratory Press, 2001, 82 pages
    "The Laboratory Safety Pocket Guide," 1996, Genium Publishing, 212 pages
    (All of these books are available from Fisher Science Education.)
32. Provide guards on all vacuum pumps and secure all compressed gas cylinders.
33. Provide an appropriate supply of first aid equipment and instruction on its proper use.
34. Remove all electrical connections from inside chemical refrigerators and require magnetic closures.
35. Require grounded plugs on all electrical equipment and install ground fault interrupters (GFI's) where appropriate.
36. Label all chemicals to show the name of the material, the nature and degree of hazard, the appropriate precautions, and the name of the person responsible for the container.
37. Develop a program for dating stored chemicals and for recertifying or discarding them after predetermined maximum periods of storage.
38. Develop a system for the legal, safe, and ecologically acceptable disposal of chemical wastes.
39. Provide fireproof cabinets for storage of flammable chemicals.
40. Provide secure, adequately spaced, well-ventilated storage of chemicals.

Fisher Science Education
A Fisher Scientific Company

Tel: 1-800-955-1177 • Fax: 1-800-955-0740 • www.fisheredu.com

For more information on the Laboratory Safety Institute, call (508) 647-1900 or visit www.labsafety.org.

LABORATORY SAFETY METER STICK...

How does your lab measure up?

Fisher Science Education
A Fisher Scientific Company

PROTECTIVE APPAREL

GLOVES

CHARTS, POSTERS, & SIGNS

EYE PROTECTION

CHEMICAL STORAGE & TRACKING SOLUTIONS

FIRE & FIRST AID

SAFETY TRAINING

For information on these and other Fisher Science Education Safety Products, please contact Customer Service or your FSE Sales Representative, or visit our Web site at www.fisheredu.com.