



# LABORATORY SAFETY GUIDELINES

## 40 SUGGESTIONS FOR A SAFER LAB




1. Have a written health, safety and environmental affairs (HS&E) policy statement.




3. Develop an HS&E orientation for all new employees and students.



5. Involve every employee and student in some aspect of the safety program and give each a specific responsibility.




2. Organize a departmental HS&E committee of employees, management, faculty, staff and students that will meet regularly.




4. Encourage employees and students to care about their health and safety and that of others.




6. Provide incentives to employees and students for safety performance.



7. Require all employees to read the appropriate safety manual and sign a statement that they agree to follow it.



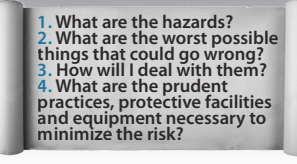
8. Conduct periodic, unannounced laboratory inspections to identify and correct hazardous conditions and unsafe practices.



9. Make learning how to be safe an integral and important part of science education, your work, and your life.



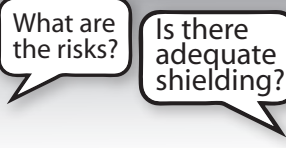
10. Schedule regular departmental safety meetings for all students and employees to discuss the results of inspections and safety issues.



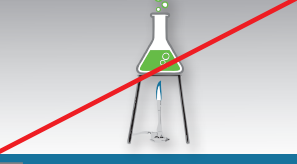
11. Before doing anything, ask the four big questions.



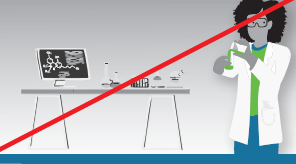
12. Require that all accidents be reported, evaluated by the departmental safety committee, and discussed at departmental safety meetings.




13. Require every pre-lab/pre-experiment discussion to include consideration of the health and safety aspects.




14. Don't allow experiments to run unattended unless they are failsafe.




15. Forbid working alone in any laboratory and working without prior knowledge of a staff member.




16. Extend the safety program beyond the laboratory to the automobile and the home.



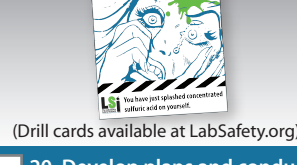
17. Allow only minimum amounts of flammable liquids in each laboratory.



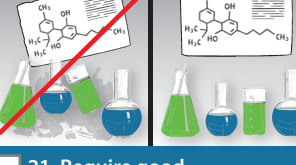
18. Forbid smoking, eating and drinking in the laboratory.




19. Do not allow food to be stored in chemical refrigerators.



20. Develop plans and conduct drills for dealing with emergencies.




21. Require good housekeeping practices in all work areas.



22. Display a list of emergency phone numbers either on or immediately next to every phone.




23. Store acids and bases separately. Store fuels and oxidizers separately.



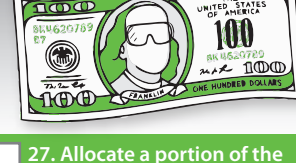
24. Maintain a chemical inventory to avoid purchasing unnecessary quantities of chemicals.




25. Use warning signs to designate particular hazards.




26. Develop specific work practices for individual experiments, such as those that should be conducted only in a ventilated hood.




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 PPE: safety glasses, goggles, face shields, gloves, lab coats, and benchtop shields.



30. Provide fire extinguishers, safety showers, eye wash fountains, first aid kits, fire blankets and fume hoods in each lab and test monthly.




31. Provide guards on all vacuum pumps and secure all compressed gas cylinders.




32. Provide an appropriate supply of first aid equipment and instruction on its proper use.



33. Provide fireproof cabinets for storage of flammable chemicals.




34. Maintain a centrally located departmental safety library.



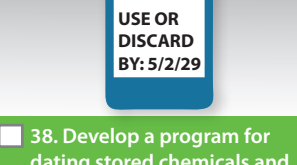
35. Remove all electrical connections from inside chemical refrigerators and require magnetic closures.




36. Require grounded plugs on all electrical equipment and install ground fault interrupters where appropriate.




37. Label all chemicals with the name of the material, the nature & degree of hazard, appropriate precautions, and the person responsible for it.



38. Develop a program for dating stored chemicals and for recertifying or discarding them after predetermined maximum periods of storage.



39. Develop a system for the legal, safe and ecologically acceptable disposal of chemical wastes.



40. Provide secure, adequately spaced, well-ventilated storage of chemicals.

Blue boxes: steps requiring minimal expense

Green boxes: steps requiring moderate expense



The Laboratory Safety Institute  
LabSafety.org

Sign up for our newsletter!  
[labsafety.org/speaking-of-safety-newsletter](http://labsafety.org/speaking-of-safety-newsletter)



\*Member discount cannot be combined with other offers.

1-Year Organizational \$250  
 1-Year Individual \$75  
 1-Year K-12 Teacher / Student \$25  
 The above memberships can also be set up with automatic yearly renewal.

### Membership Types

- 50% off standard webinar\*
- Access to lab safety hotline

- First to know about new courses and specials

- 15% discount on all LSI publications and all products\*

- 15% discount on all courses (including webinars)\*

### Membership Benefits

If you are planning on offering a safety course to your employees in the next 6-12 months, the cost benefits of an LSI membership can be significant.

LabSafety.org/membership  
**Become a Member**

## TAKE A COURSE

Register at [LabSafety.org](http://LabSafety.org)

Drawing on more than 40 years of experience, LSI's **real-world approach to safety** opens eyes with safety **"fail" stories you won't forget**. Besides a fancy certificate to stick on the wall, you'll walk away with an actionable list of things you can do right now to develop or improve your lab safety program.

- **Live courses (in-person and virtual)**
- **Online video courses**

### 24-Hour Lab Safety Boot Camp

### 2-Day Short Course

**Chemical Hygiene Officer**  
 (official 1-day prep course for NRCC exam)

### Biosafety (BSL 1 and 2)

### Lab Waste Management

**Scholarships for Teachers**  
[labsafety.org/lab-safety-teachers](http://labsafety.org/lab-safety-teachers)

Because the schools that need lab safety programs the most are often the least able to afford them, LSI offers scholarships (up to \$800) for K-12 educators to receive the same industry-tested education we offer our corporate clients. All you need is a teacher ID!

LSI is supported by the generous contributions of our members, friends and corporate sponsors: Abbott Labs, American Chemical Society, Cabot Corporation, Carolina Biological Supply, Dow Chemical, Erlab Group, Fisher Scientific, Flinn Scientific, Honeywell, MA Dept. of Industrial Accidents, Michele Dufault Foundation, National Safety Council, Olin Research, Pfizer, Polaris, Union Carbide and VWR.

Under the OSHA Lab Standard, a review of your Chemical Hygiene Plan (CHP) is required at least annually. LSI can provide a thorough review of your CHP or other documents and provide a fresh perspective on ways to improve the plan and help to ensure OSHA compliance.

### Document Review

We use a 33-point system to evaluate the effectiveness of your safety program. We provide a written report of recommendations for improvement, possible cost savings, and areas of liability exposure and regulatory non-compliance.

• Provides a fresh look at areas and problems that may currently be taken for granted or overlooked by habit.  
 • Catalyzes implementation of improvements more effectively than "in-house" voices.

### Audits

This "outside view" is available live and virtually.

### Lab Inspections

## SERVICES

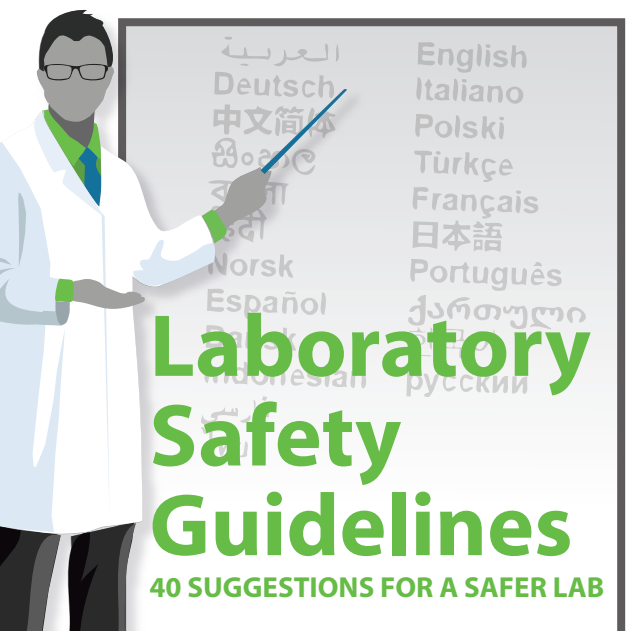
## The Laboratory Safety Institute

An International Center for Science Safety

- Lectures, seminars & short courses
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- International internships
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- Safety program development
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**LSI** The Laboratory Safety Institute  
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[info@labsafety.org](mailto:info@labsafety.org)

## The Big Bang That Started the Laboratory Safety Institute



**More than 6 million copies distributed in 22 languages (plus Braille)!**

**Laboratory Safety Guidelines** was originally written while Dr. James Kaufman worked for the Dow Chemical Company. In 1976, Dow sent copies to 2,000 colleges and university chemistry departments and received requests for 250,000 reprints! Since then, millions of copies have been produced with the help of Carolina Biological Supply and Fisher Science Education.

**Laboratory Safety Institute**  
 Teach, Learn and Practice Science Safely

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"I got there two hours after the explosion," Kaufman remembers. "The light fixtures had been blown off the ceiling, the windows had been blown out of the room. A grad student I knew blew off portions of his hands, and he was lucky he wasn't killed!"

While driving home from work in 1973, James Kaufman heard on the radio that there had been a serious explosion at Worcester Polytechnic Institute in Massachusetts, where he had earned his Ph.D. just a few years before. He decided to bypass his house and drive straight to the Worcester lab instead.

This experience is part of what propelled Kaufman to found the Laboratory Safety Institute (LSI) in 1978. Today, LSI provides science safety education and consulting to academia, government and industry worldwide. More than 100,000 scientists and science educators in 34 countries have taken one of LSI's courses.