Laboratory Safety Meeting Kit

What’s At Stake

Laboratory (lab) workers work with chemicals, glassware, flame, and manual and automatic laboratory equipment. While lab workers experiment with specimens and reagents, safety in the laboratory should be a known quantity.

DEVELOPMENT OF SAFETY SKILLS FOUR EMPHASIS AREAS IN LABORATORIES

Recognize Hazards. A hazard is a potential source of danger or harm and can result from working with chemicals, equipment, and instrumentation.

Assess Risks. Once a hazard(s) is recognized, laboratory safety necessarily requires an assessment or evaluation of risk from potential exposure to the hazard.

Minimize Risks. Based on a risk assessment, experiments should be designed to minimize potential risks.

Prepare for Emergencies. It is essential to react promptly and deliberately to emergencies, and what to do and be prepared to act accordingly.

What’s the Danger

LABORATORY HAZARDS

1. Fire/Explosions

In a laboratory, all chemicals and liquids should be treated as if they are as potent as gasoline.

2. Thermal and Chemical Burns

Many chemicals, both organic and inorganic, may be flammable or corrosive to the skin and eyes.

3. Skin Absorption of Chemicals

Keeping chemicals away from direct contact with the skin is fundamental in laboratory safety.

4. Inhalation of Toxic Fumes

Many common solvents are extremely toxic if inhaled, and inhalation of certain chemicals severely can irritate membranes in the eyes, nose, throat and lungs.

5. Cuts to the Skin

Cuts to the skin are one of the most common types of laboratory accidents.

HOW TO PROTECT YOURSELF

LABORATORY SAFETY CHECKLIST

- Know locations of laboratory safety showers, eyewash stations, and fire extinguishers.
- Know emergency exit routes.
- Avoid skin and eye contact with all chemicals.
- Minimize all chemical exposures.
- No horseplay will be tolerated.
- Assume that all chemicals of unknown toxicity are highly toxic.
- Post warning signs for unusual hazards, hazardous materials, and equipment.
- Avoid distracting or startling persons working in the laboratory.
- Use equipment only for its designated purpose.
- Combine reagents in their appropriate order, such as adding acid to water.
- All laboratory personnel should place emphasis on safety and chemical hygiene at all times.
- Never leave containers of chemicals open.
- All containers must have appropriate labels. Unlabeled chemicals should never be used.

- Do not taste or intentionally sniff chemicals.
- Never consume and/or store food or beverages or apply cosmetics in areas where hazardous chemicals are.
- Do not use mouth suction for pipetting or starting a siphon.
- Wash exposed areas of the skin prior to leaving the laboratory.
- Long hair and loose clothing must be pulled back and secured from entanglement or potential capture.
- No contact lenses should be worn around hazardous chemicals – even when wearing safety glasses.
- Laboratory safety glasses or goggles should be worn in any area where chemicals are used or stored.
- Procedures should be developed that minimize the formation and dispersion of aerosols.
- If an unknown chemical is produced in the laboratory, the material should be considered hazardous.
- Do not pour chemicals down drains. Do NOT utilize the sewer for chemical waste disposal.
- Keep all sink traps (including cup sink traps and floor drains) filled with water by running water down the drain.
- Do not utilize fume hoods for evaporations and disposal of volatile solvents.
- Perform work with hazardous chemicals in a properly working fume hood to reduce potential exposures.
- Do not work alone in a laboratory if the procedures being conducted are hazardous.
- The PEL and the Threshold Limit Values (TLV) will be observed in all areas.
- Laboratory employees should have access to a chemical inventory list, applicable SDSs.
- Access to laboratories should be limited to approved personnel only.
- All equipment should be regularly inspected for wear or deterioration.
- Equipment should be maintained according to the manufacturer’s requirements and records of certification, maintenance, or repairs should be maintained for the life of the equipment.

- Designated and well-marked waste storage locations are necessary.
- No cell phone or earphone usage in the active portion of the laboratories, or operations.
- Clothing made of synthetic fibers should not be worn while working with flammable liquids.
- Laboratory coats should not be stored in rooms as these spreads contaminates to other areas.
- Computers and instrumentation should be labeled to indicate whether gloves should be worn or not.
- Avoid wearing jewelry in the lab as this can pose multiple safety hazards.
- Eye wash stations, emergency showers, fire extinguishers, exits are always unobstructed and accessible.
- Only materials you require for your work should be kept in your work area.
- Solids should always be kept out of the laboratory sink.

FINAL WORD

Very delicate and dangerous work is performed in the confines of laboratory environment. Constant vigilance and training is a prime prerequisite as dangerous hazards lurk at all times and locations of this workplace.