



Division of Safety and Hygiene

SAMPLE WRITTEN PROGRAM LABORATORY SAFETY

PURPOSE

To provide (Company name) employees with the necessary information and training to prevent laboratory chemical accidents, and protect our employees against injuries and illnesses.

APPLICATION

The policies in this program apply to all employees responsible for the storage, handling and use of laboratory chemicals.

CONTROL MEASURES

Engineering and work practice controls will be the primary means of minimizing employee exposure to harmful chemicals. Appropriate personal protective equipment and clothing also will be provided, and required to be worn.

Engineering controls

Engineering controls include general room ventilation, fume hoods and other exhaust systems.

(Company name) will ensure that room ventilation in the laboratory area is sufficient to produce four to 12 room air changes an hour, if local exhaust methods such as fume hoods are used; more if they are not. The company will monitor air quality, and ventilation quantity, every three months.

Laboratory hoods must provide at least 2.5 linear feet of hood space per person; with one hood for every two workers who spend the majority of their time working with chemicals.

The company also will provide ventilated storage cabinets, canopy hoods and snorkels as needed. Canopy hoods and snorkels will have separate exhaust ducts.

Work practices

The laboratory supervisor will ensure that: Employees do not eat, drink or smoke in areas where chemicals are being used;

- All floors are cleaned regularly;
- Housekeeping and chemical hygiene inspections are performed on a regular basis;
- Eyewash fountains are inspected at least every three months, if not more often;
- Respirators, safety showers and other safety equipment are inspected periodically;
- Proper lockout/tagout procedures are followed in restarting out-of-service equipment;
- Stairways, hallways, and access to exits and emergency equipment are unobstructed at all times.

Personal Protective Equipment (PPE)

(Company name) will provide protective clothing (lab aprons, gloves, etc.) and equipment (face shields or safety glasses) appropriate for the chemicals being used, ensuring that it meets all requirements for protective capability.

The company also will provide:

- An eyewash fountain(s) and safety shower to remove chemicals from the eyes and skin;
- Fire extinguishers;
- Emergency respiratory protection, fire alarms and a telephone for emergency situations;
- Any other items deemed appropriate by the laboratory supervisor.

CHEMICAL STORAGE

To prevent incompatible chemicals from being stored together, chemicals will be classified, and sub-classified, as follows:

- Solids—oxidizers, flammable solids (red phosphorus, magnesium, lithium), water reactives;
- Liquids—acids, oxidizers, flammables/combustibles, caustics and perchloric acid;
- Gases—toxic, inert and oxidizers, and flammables.

Use approved storage containers for all chemicals, and be sure containers are clearly and accurately labeled. Store containers away from heat sources and out of direct sunlight.

Periodic chemical inventories will be conducted in order to find and dispose of chemicals that have been stored past their effective dates. Some chemicals decompose and form potentially explosive peroxides if stored for too long, or if exposed to air or sunlight. Peroxide-forming chemicals, such as ethers, are extremely sensitive to sparks and static electricity and present an accidental-ignition hazard. These must be disposed of after one year and replaced.

Do not store chemicals on counters or other surfaces from which they can be knocked off, or on the floor, where they present a tripping hazard. Liquid chemicals, especially corrosives and solvents, must not be stored above eye level.

MEDICAL MONITORING

The company will provide an opportunity to seek medical attention, including necessary follow-up examinations, whenever:

- An employee develops symptoms associated with exposure to a hazardous chemical;

- Exposure monitoring detects an exposure level which routinely exceeds the OSHA action level for that chemical;
- A spill, leak, explosion or other incident increases the chance that a hazardous exposure occurred.

All examinations and consultations are to be performed by or under the supervision of a licensed physician and at no cost to the employee, with no loss of pay and at a reasonable time and place.

The company is responsible for providing the following information to the examining physician:

- Identity of the chemical or chemicals to which the employee may have been exposed;
- The conditions under which the exposure occurred;
- Exposure symptoms the employee is experiencing, if any.

CHEMICAL SPILLS

Small chemical spills may be cleaned up safely by laboratory workers if they consult the Material Safety Data Sheet (MSDS) for that chemical to determine the appropriate cleanup method. However, large spills or those involving highly toxic or reactive chemicals that present a threat to lab workers or the public must be cleaned up by trained, experienced personnel.

If cleaning up a small chemical spill:

- Notify those working in the area of the spill;
- Increase ventilation in the area by opening windows or turning on ventilator hoods;
- Wear proper protective equipment (goggles, gloves, lab coats);
- Do not breathe chemical vapors;
- Use spill kits appropriate for the chemical, place chemical residue in the appropriate container and dispose of it as hazardous waste;
- Clean the area with water.

If a major spill occurs:

- Attend to and evacuate anyone injured or contaminated by the spill;
- Evacuate all others from the laboratory;
- Turn off all possible ignition sources if the chemical is flammable;
- Call the Chemical Spill Emergency Response number (_____);
- Close all doors to the area;
- Have a witness available to describe the incident for emergency personnel.

INJURY OR CONTAMINATION

In the event an employee is contaminated and/or injured by a hazardous chemical:

- Know the location of the nearest eye wash fountain and safety shower;
- Remove contaminated clothing;
- Flood the affected body area with *cold water only* for a minimum of 15 minutes;
- If the chemical splashed in the victim's eye, remove contact lenses if they are worn;
- Report all incidents and injuries to supervisors;
- Use a blanket to protect the victim from shock and exposure;
- Call _____ immediately for emergency medical attention.

In case of ingestion, identify the chemical and call the emergency poison control number (_____).

If the victim has been overcome by smoke or chemical vapors, remove the victim to an area where there is fresh air, and treated for shock. Get prompt emergency medical attention, including CPR if needed.

Extinguish burning chemicals on clothing by using the 'drop-and-roll' method or cold water if it is available. Remove contaminated clothing unless doing so will cause further damage to the burned area. Cool the burned area with water or with ice packs until the tissue around the burn feels normal to the touch. Cover the victim with a blanket to prevent shock.

CHEMICAL DISPOSAL

All chemical waste must be disposed of according to government regulations, manufacturer specifications and company requirements. Do not use drains or lab hoods for chemical disposal; use a designated storage area for chemical waste; and dispose of all chemical waste in a timely manner.

EMPLOYEE INFORMATION AND TRAINING

The company will ensure that all laboratory employees receive adequate information and training in the risks of the job, what precautions to take, and what to do in case of an emergency.

Material Safety Data Sheets (MSDSs) for all laboratory chemicals used at this facility will be obtained from the chemical manufacturers and kept on file for employee reference.

Training will include:

- Location and use of protective clothing and equipment (all lab employees);
- Proper use of emergency equipment (full-time employees);

- Emergency procedures;
- First aid (upon request);
- Chemical hazards, handling equipment, protective clothing, regulations (receiving and stockroom personnel).

All new laboratory employees will receive safety training upon hiring; and employee training will be an ongoing, rather than one-time or once-a-year, process.