



Laboratory Standard Operating Procedure for:

CHEMICAL NAME/PROCEDURE

Description

Describe the process, hazardous chemicals, concentration, quantity required, and approximate frequency of use.

Potential Hazards

State route of exposure (skin, inhalation, ingestion, injection) when/how exposure might occur (inhalation of gases/vapors, inhalation during weighing and mixing, splashes, cleaning up spills, etc.). Be sure to indicate if material is a gas, liquid, powder, pellet, etc. Hazards will be found in the SDS. Look for information on whether the chemical is flammable, corrosive, toxic, carcinogenic, pyrophoric, an irritant, etc.

Engineering Controls

State the safety equipment that must be used (ex. chemical fume hood, Biological Safety Cabinet (BSC), laminar flow hood, vented ovens, furnaces, glove boxes, etc.). If this is a new process and the appropriate engineering controls do not seem to be available in the lab, discuss with lab staff whether the process can be done and how to obtain what is needed. If no engineering controls are needed please cite this fact. Consider if liquid form would be less hazardous than powder and, if so, purchase in liquid form. If possible, indicate that the chemical will be purchased in small quantities or dilute solutions to reduce the risk of exposure and minimize waste. If weighing powder and balance cannot be located in a fume hood or BSC, tare a container then add powder in the hood and cover before returning to the balance to weigh the powder.

Work Practice Controls

Describe work practices to be used that reduce exposure to hazardous chemicals. Describe required hand washing and the frequency for changing PPE. Describe additional safe work practices, such as keeping containers closed, working away from open flames, etc.

Personal Protective Equipment (PPE)

Describe PPE requirements for each task involving the chemical. (Examples: gloves, lab coat/gown, safety glasses/goggles, face shield, respirator, closed-toe shoes, and splash apron).

Note: Respirators are masks designed to protect the wearer from specific airborne hazards and are different from surgical masks, which protect the wearer only from splashes and are primarily intended to protect others from infectious aerosols exhaled by the wearer. Respirator use requires employee participation in the Respiratory Protection Program, which involves medical clearance and annual fit testing and training. Please be clear about use of surgical masks versus respirators. (Do NOT use the vague term "masks".)

Transportation and Storage

Describe where will you store hazardous materials in the lab, e.g., solvent, acid, or base cabinet, refrigerator, etc. Be aware of incompatibility with other chemicals already in use in the lab. Chemical containers must be labeled with chemical name (& concentration, if diluted) and hazard warnings at a minimum. Describe transportation strategy (use of secondary containers, travel through low-traffic hallways). State chemical segregation strategies (list incompatibles).

Waste Disposal

Provide guidance on how waste products are disposed. Be specific and describe the specific disposal procedure to be used, i.e., do not write "Dispose of in accordance with applicable regulations".

Because most spent, unused and expired chemicals/materials are considered hazardous wastes, they must be properly disposed of. ***Do not dispose of chemical wastes by dumping them down a sink, flushing in a toilet or discarding in regular trash containers.*** Contact EHS at (313) 593-0921 for waste containers, labels, manifests, waste collection and for any questions regarding proper waste disposal. Also, refer to EHS's [Hazardous Waste Webpage](#) for more information.

Exposures/Unintended Contact



If the employee is in need of emergency medical attention, call 911 immediately.



Describe what actions to take in an exposure incident i.e. leaving the area for inhalation hazards, removing contaminated clothing and/or PPE, flushing eyes and skin. Describe procedures to contact Occupational Health Services for medical advice on occupational exposures and completing the work-related injury and illness form.

Report all work related accidents, injuries, illnesses or exposures to WorkConnections within 24 hours by completing and submitting the [Illness and Injury Report Form](#). Follow the directions on the WorkConnections website [Forms Instructions](#) to obtain proper medical treatment and follow-up.

Complete the [EHS Laboratory Incident and Near-Miss Report](#) form.

TREATMENT FACILITIES:

Midwest Medical Center -- *Campus Employees (including student employees)*

Mon-Fri 7:30 am - 4:30 pm

9301 Middlebelt Road

Romulus, MI 48174

Phone: 734-941-1000

After hours - go to:

Midwest Medical Center

Open 24/7

4700 Schaefer

Dearborn, MI 48126

Phone: 313-581-2600

Henry Ford Medical Center-Fairlane -- *University students (non-life threatening conditions)*

19401 Hubbard Drive

Dearborn, MI 48126

Phone: 313-928-8278

Click [here](#) for additional accident and injury reporting information.

Spill Procedure

Describe how employees should handle spills. Are there specific absorbents that should be used? If it's a gas leak, what do you do when the detectors go off? Be specific. Are there specific concerns to be considered in the event of a fire? For example, some chemicals are water reactive, and using water on a fire where these chemicals are involved will make the problem worse.

- When a spill occurs, ***personal safety should always come first.***
- Alert and clear everyone in the immediate area where the spill occurred.

A **minor (small) chemical spill** is one that the laboratory staff is capable of handling safely without the assistance of safety and emergency personnel, i.e., less than 1 gallon or 3.5 liters. A **major/large chemical spill** requires active assistance from emergency personnel.

Spill Response Steps:

MINOR CHEMICAL SPILL

- Alert people in immediate area of spill.
- If spilled material is flammable, turn off ignition and heat sources. Don't light Bunsen burners or turn on other switches.
- Open outside windows, if possible.
- Wear protective equipment, including safety goggles, gloves and long-sleeve lab coat.
- Avoid breathing vapors from spill.
- Confine spill to as small an area as possible.
- **Do not wash spill down the drain.**
- Use appropriate spill kits/sorbents to neutralize corrosives and/or absorb spill. Collect contaminated materials and residues and place in container. For powdered chemicals sweep carefully to avoid generation of dust or, if appropriate, use moist sorbent pads or wet the powder with a suitable solvent and then wipe with a dry cloth. Label and manifest waste and contact EHS at (313)593-0921 for proper disposal.
- Clean spill area with water.

MAJOR CHEMICAL SPILL

- Attend to injured or contaminated persons and remove them from exposure.
- Alert people in the laboratory to evacuate.
- If spilled material is flammable, turn off ignition and heat sources. Don't light Bunsen burners or turn on other switches.
- **Call Public Safety at (313) 593-5333 or (911 from a campus phone) immediately for assistance.**
- Close doors to affected area.
- Post warnings to keep people from entering the area.
- Have person available that has knowledge of incident and laboratory to assist emergency personnel.

Additional Spill Links:

- [Chemical Spill Control Information](#)

Report all emergencies, suspicious activity, injuries, spills, and fires to Public Safety by calling at (313) 593-5333 or 911 from a campus phone. Register with the University of Michigan-Dearborn [Emergency Alert System](#).

Training of personnel

All person are required to attend initial (first-time) training in class (go to <http://www.umd.umich.edu/training/> to register). Refresher training can be completed via [MyLINC](#), the **Comprehensive Laboratory Safety** session (**BLS009** or *equivalent*). Furthermore, all personnel shall read and fully adhere to this SOP when handling the chemical.

Certification

I have read and understand the above SOP. I agree to contact my Supervisor or Lab Manager if I plan to modify this procedure.

Name	Signature	UM ID #	Date

Prior Approval required – Is this procedure hazardous enough to warrant prior approval from the Principal Investigator? ☐ YES ☐ NO

Principal Investigator _____

Revision Date _____