**Insert Title**

STANDARD OPERATING PROCEDURE

**Type of SOP:** 🞏Process 🞏Hazardous Chemical 🞏Hazard Class

All Laboratory Personnel subject to this SOP must review the completed SOP and sign the associated training record. Completed SOPs should be maintained by the laboratory as part of their overall documents and records. This is a template and may be customized by the laboratory as needed. Please remember that each chemical has unique properties that must be considered.

Date SOP Written: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Version: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SOP Prepared by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Position: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SOP Reviewed and Approved by:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name Signature Date

Principal Investigator/

Laboratory Supervisor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Emergency Contact(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Location(s) using this SOP:

Building(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Primary Lab

Phone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Room Number(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **HAZARD OVERVIEW**

*This section should contain a brief description of the process involving the hazardous chemical(s) or the hazard class covered in the SOP.*

1. **HAZARDOUS CHEMICAL(S)/CLASS OF HAZARDOUS CHEMICAL(S)**

*List the chemical(s) or class of chemicals. Describe important properties, including such things as flammability, reactivity, toxicity, signs and symptoms of exposure, etc.*

1. **ENGINEERING/VENTILATION CONTROLS**

*Discuss lab-specific engineering controls used to reduce chemical exposure. These would include fume hoods, glove, boxes, snorkels, biosafety cabinets, etc. Also include any other engineering controls used to the control hazards such as blast shield or pressure relief device.*

1. **ADMINISTRATIVE CONTROLS**

Required Elements for all individuals working in SMU Research Laboratories:

1. Complete SMU’s Laboratory Safety Training course.
2. Complete Laboratory Specific training provided by the Principal Investigator or Laboratory Supervisor (note: this was most likely part of an onboarding process when joining the lab).
3. Familiarization with the University Chemical Hygiene Plan, Emergency Procedures, and location/accessibility of Safety Data Sheets (SDSs).
4. Inspect all equipment and setups prior to use.
5. Follow best practices for the movement, handling, and storage of chemicals as outlined on the University webpage (See [Prudent Practices in the Laboratory](http://www.nap.edu/catalog/12654/prudent-practices-in-the-laboratory-handling-and-management-of-chemical) for more detailed information). Know the location of the nearest spill kit and ensure the lab is equipped for specialized spills.
   1. Follow appropriate chemical storage and labeling guidelines.
   2. Ensure hazardous waste is managed properly.
6. Do not deviate from this SOP without prior approval from the laboratory supervisor.
7. Notify the laboratory supervisor of any incidents, near-misses, or sudden condition changes.
8. Avoid working alone whenever possible.
9. **PERSONAL PROTECTIVE EQUIPMENT**

Minimally, long pants and closed-toed shoes are required to enter an area where hazardous chemicals are used or stored. In addition to this standard attire, the following are applicable when working with hazardous processes and/or chemicals.

1. Eye Protection
   1. Must be ANSI Z87.1 compliant (ordinary prescription glasses not meet this standard unless they are certified safety glasses with the Z87.1 stamp and side shields)
   2. Safety glasses are the minimum standard.
   3. Splash goggles must be used when there is a reasonable chance for chemical splashes or when generating aerosols.
2. Body Protection
   1. Chemical compatible laboratory coat
   2. If risk of fire exists, a flame retardant lab coat must be worn
   3. For corrosive chemicals and chemicals that are toxic via skin contact, additional precautions must be taken. These may include aprons, disposable sleeves, face shields, etc.
3. Hand Protection: Glove selection should be based on:
   1. Chemical being used
   2. Expected contact (incidental, immersion, etc.)
   3. Manufacturers’ permeation/compatibility data

*Specific PPE requirements for this SOP should be included here including glove type, body protection, and any specialized PPE not otherwise mentioned.*

1. **SPILL AND EMERGENCY PROCEDURES**

The [SMU Chemical Hygiene Plan](https://www.smu.edu/-/media/Site/BusinessFinance/RiskMgmt/Health-Safety/Chemical-Hygiene-Plan-2015-2016.ashx?la=en) outlines general protocols for spill cleanup (page 18). General spill kits are provided in all of the laboratory buildings. For this lab, the nearest spill kit is at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. For spills less than one gallon, the lab is responsible for handling the cleanup if it is comfortable doing so and if all of the proper cleanup materials are available. Spills greater than a gallon, resulting in environmental contamination, or representing a hazard that the laboratory is uncomfortable handing, should be reported to SMUPD at 911 or 214-768-3333.

*If applicable, descriptions of specialized spill cleanup procedures for chemicals used in this SOP should be included here. List any specialized spill kits present within the laboratory as well.*

1. **WASTE MANAGEMENT AND DECONTAMINATION**

Hazardous waste must be managed in accordance with local, state, and federal guidelines. SMU maintains a [Hazardous Waste webpage](https://www.smu.edu/BusinessFinance/RiskManagement/Health-Safety/ResearchSafety/ChemicalSafety/ChemicalWaste) to assist researchers in ensuring they are following appropriate laws.

*Provide information on waste streams generated in association with this SOP along with any specialized storage and handling instructions.*

*Provide information and decontamination procedures for equipment, glassware, and controlled areas of the lab where contamination may have occurred.*

Soiled or contaminated PPE is not allowed to be worn outside of the lab. Disposable PPE should be disposed of properly. Non-disposable should be decontaminated or sent out for professional laundering.

1. **DESIGNATED AREA (PARTICULARLY HAZARDOUS SUBSTANCES)[[1]](#footnote-1)**

*Designated area(s) are required for use of particularly hazardous substances. This could be the entire lab, a specific fume hood, or a portion of the lab. It must be labeled with the hazards and as area of use for particularly hazardous substances. Please use this space to designate the area. In most cases, this will be the whole lab, in which case it will be designated on the laboratory door sign.*

1. **DETAILED PROTOCOL**

*Insert or attach a detailed laboratory-specific procedure for the process, hazardous chemicals, or hazard class. Include any relevant supporting resources such as journal citations, textbook references, etc.*

**LABORATORY REVISION HISTORY**

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| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Revision Notes:** |
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**DOCUMENTATION OF TRAINING**

* Prior to commencing work outlined within this SOP, laboratory personnel must be trained on all aspects within the SOP, including protection from hazards and emergency procedures.
* This SOP and any associated SDS must be readily accessible (electronic accessibility is allowed).
* The Laboratory Supervisor or PI is responsible for ensuring that all personnel have attended the appropriate laboratory safety training.
* SOP training must be repeated following any modification the the SOP and must be documented and accessible.

**Designated Trainer for this SOP:**

Name: *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* Position: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**TRAINING RECORDS:**

*I have read and acknowledge the contents, requirements, and responsibilities outlined in this SOP:*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Signature** | **Trainer Initials** | **Date** |
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1. The OSHA Laboratory Standard defines a Particularly Hazardous Substance (PHS) as being a select carcinogen, reproductive toxin, or having a high degree of acute toxicity. [↑](#footnote-ref-1)