**Standard Operating Procedure**

**Acutely Toxic Materials**

***This is an SOP template and is not complete until:*** *1) lab specific information is entered into the box below 2) lab specific protocol/procedure is added to the protocol/procedure section and
3) SOP has been signed and dated by the PI and relevant lab personnel.*

*To find information on what acutely toxic materials are in your inventory, login to SciShield, go to ChemTracker tab, totals link at the top, under the “chemical hazards” drop down, click on the box for “12. severely toxic” and click submit.*

 Print a copy and keep with your
*Chemical Hygiene Plan* and/or *Lab Safety Resources Binder*

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| --- | --- |
| **Department:** | Click here to enter text. |
| **Date SOP was approved by PI/lab supervisor:** | Click here to enter a date. |
| **Principal Investigator:** | Click here to enter text. |
| **Lab Safety Coordinator/Lab Manager:** | Click here to enter text. |
| **Lab Phone:** | Click here to enter text. |
| **Office Phone:** | Click here to enter text. |
| **Emergency Contact:** | Click here to enter text. |
| *(Name and Phone Number)* |
| **Location(s) covered by this SOP:** | Click here to enter text. |
| *(Building/Room Number)* |

**Type of SOP:** ☐ Process x Hazardous Chemical ☐Equipment

1. **Purpose**

Acutely toxic materials present special hazards intrinsic to their use in research including potentially serious health issues and even fatalities upon exposure. The purpose of this SOP is to establish minimum standards and best practices for handling such materials.

This SOP is to be applied while opening, working with, transporting, storing, or preparing for disposal any materials that fall under the acutely toxic designation.

1. **Physical & Chemical Properties/Definition of Chemical Group**

CAS#:

Class: Chemicals with a GHS toxicity category of 1 or 2.

Acutely toxic materials covered under this SOP are defined as materials whose adverse effects following oral or dermal administration of a single dose or multiple doses of a substance within 24 hours or an inhalation exposure of within 4 hours and have the following Acute Toxicity Estimate Value:

Ingestion Exposure: LD50≤ 50mg/kg; Inhalation Exposure LC50≤ 200ppm (2mg/l), or Dermal Exposure LD50 < 200 mg/kg

1. **Safety Data Sheet (SDS) Location**

Online SDS can be accessed at (<http://oregonstate.edu/ehs/sds>). A hard copy can be found at Oak Creek Building with Environmental Health & Safety.

1. **Personal Protective Equipment (PPE)**

Laboratory personnel must always wear a lab coat when working in a lab. Closed-toed shoes are also required at all times.

**Hand Protection –** Double gloves shall be worn when working with acutely toxic materials. Outer gloves should be changed frequently to minimize contamination.

**Eye Protection –** Safety glasses must be worn at all times when working. Goggles must be worn when handling liquids or when a solid is handled outside a fume hood or glove box.

**Skin and Body Protection –** Standard lab coat. Long pants and closed toed shoes are also required at all times under lab coat.

**Respiratory Protection –** Respiratory protection is not required for handling within a fume hood or glove box. Use of materials outside such containment requires respiratory protection and must be approved by EH&S. User will need to be cleared medically for respiratory use by OSU Occ Safety and fit tested by EH&S. EH&S will also approve respirator and cartridge selection. Respiratory protection program details can be found here <https://ehs.oregonstate.edu/respiratory-protection-program>

1. **Engineering Controls**

Material must be used within a certified glove box or fume hood. Use outside of a glove box or fume hood will require respiratory protection and procedures to be approved by EH&S.

Chemical fume hoods used as containment areas for particularly hazardous chemicals must have a face velocity of 90-120 feet/min, averaged over the face of the hood and must be certified annually.

Laboratory rooms must be at negative pressure with respect to the corridors and external environment. The laboratory/room door must be kept closed at all times.

1. **Process Description**

*Here you should input the proper steps for the process in which you are trying to use the acutely toxic chemical. The process should be detailed and specific.*

1. **First Aid Procedures**

If an accident happens the following documents must be completed:

* Online OSU HR Advocate Public Incident Reporting Form within 24 hours of the incident
* If the employee’s incident resulted in the need for medical treatment, have the employee complete the worker section of the SAIF 801 Form and fax to risk management at 541-737-4855 within 24 hours.

**If inhaled**

Move to fresh air. If the person is not breathing, give artificial respiration. Avoid mouth to mouth contact. Call 911 from a phone. Call EHS at 541-737-2273 after emergency services have been contacted to report the incident. Notify supervisor and PI.

**In case of skin contact**

Immediately (within seconds) flush affected area for at least 15 minutes. Remove all contaminated clothing. Call 911 immediately. Call EH&S at 541-737-2273. Notify supervisor and PI.

**In case of eye contact**

Use eye wash to flush eyes for 15 minutes. Call 911. Follow safety instruction for further assistance: <http://ehs.oregonstate.edu/sites/ehs.oregonstate.edu/files/pdf/si/eyewash_and_safety_shower_si.pdf>

**If ingested**

Do not induce vomiting. Contact 911 and/or poison control center if swallowed: 1(800)222-1222

1. **Special Storage & Handling Requirements**

**Handling**:

Handle/transport only when wearing full required PPE and when another lab member is present.

Work surfaces should be protected (e.g. absorbent bench paper, aluminum foil, etc.) and must be decontaminated after each use.

Working alone is prohibited during the handling of any acutely toxic materials.

If possible, designate a specific handling area for acutely toxics, such as an entire fume hood. This reduces the hazard for other potential lab users. Post a “Acutely Toxic Material Work Area” sign on the hood.

**Storage:**

Ideal storage is within a glove box. Storage within a designated chemical cabinet is also acceptable with appropriate containment and segregation.

**Transporting:**

Acutely toxic materials shall only be transported in sealed non-breakable containers within the lab i.e. from storage cabinet to fume hood/glove box. Any transport outside of an individual lab must be in double containment by personnel in full PPE.

1. **Chemical Spill OSU Chemical Spill Safety Instruction**: <http://ehs.oregonstate.edu/sites/ehs.oregonstate.edu/files/pdf/si/spill_response-chemicals_si.019.pdf>

1. Due to the highly hazardous nature of these chemicals and their potential for serious injury from exposure, spills outside of a glove box are considered a high hazard spill and must be cleaned up by EH&S. Call Public Safety (541-737-7000) and tell them to contact the on-call EH&S personnel to respond to the spill.

2. Provide the following information:

o Your name and contact phone number

o Location of the spill (Building and room number)

o Approximate volume of spilled liquid

o Name of chemical

3. Do not attempt to clean up large and/or hazardous chemical spills.

4. Notify all other workers who could be affected by the spill and vacate the laboratory/floor/building, particularly if the chemical produces hazardous fumes or poses other potential health hazards.

5. Wait at the building entrance for EH&S personnel.

6. Serve as a point of contact and provide information about the spill, as requested by EH&S personnel.

**Personal precautions**

PPE appropriate for handling acutely toxics is also appropriate for cleaning up incidental spills.

**Environmental precautions**

Materials must be used within an enclosed lab research setting and should not be exposed to the outside environment.

**Methods and materials for containment and cleaning up**

 A hard copy of the spill response Safety Instruction

 A hard copy of the Pink Pig Absorbent Pad Chemical Compatibility Chart <http://www.newpig.com/wcsstore/NewPigUSCatalogAssetStore/Attachment/documents/ccg/HAZMAT.pdf>

 Bucket with screw-on lid

 6 Pink Pig Absorbent Pads (Item number MAT301 at [www.newpig.com](http://www.newpig.com))

 Heavy duty black plastic garbage bags  Zip ties (to seal garbage bags)

 Hazardous Waste Labels (available at <http://oregonstate.edu/ehs/waste>)

 Cardboard rectangles/squares for handling used Pig Pads, if necessary

 Appropriate lab-specific PPE, such as lab coats, goggles, gloves, etc., should be available in each laboratory

1. **Other Emergencies**

**Medical Emergency Dial 911**

**Life Threatening Emergency, After Hours, Weekends and Holidays** – Dial **911** (This will connect you to Good Samaritan Hospital Corvallis where they will be able to treat the victim).

**Non-Life Threatening Emergency** – Notify lab supervisor/PI of incident and seek medical attention as needed.

1. **Decontamination/Waste Disposal Procedure**

*General hazardous waste disposal guidelines:*

**Label Waste**

* Affix an EH&S hazardous waste label on all waste containers (<http://ehs.oregonstate.edu/sites/ehs.oregonstate.edu/files/pdf/hwlabelfull.pdf>) as soon as the first drop of waste is added to the container.

**Store Waste**

* Store hazardous waste in closed containers, in secondary containment and in a designated location. ([http://ehs.oregonstate.edu/sites/ehs.oregonstate.edu/files/pdf/si/waste\_hazardous\_disposal\_si.pdf)](http://ehs.oregonstate.edu/sites/ehs.oregonstate.edu/files/pdf/si/waste_hazardous_disposal_si.pdf%29).
* Double-bag dry waste using transparent bags
* Waste must be under the control of the person generating & disposing of it

**Dispose of Waste**

* Dispose of regularly generated chemical waste within 90 days
* Put in a waste request at: <http://ehs.oregonstate.edu/waste>
1. **References**

[Include any references useful to employees]

1. **Training Requirements**

No researcher may work independently with the hazardous material described in this SOP until the Principal Investigator (or their designee) has ensured that the researcher:

* Has completed all required EH&S laboratory safety training programs
* Understands the hazards of the materials and risks of the processes involved
* Has read and understand the contents of this SOP and the lab's specific SOP
* Demonstrates the ability to execute their work according to the requirements in this SOP and the lab's specific SOP

All researchers should also be up-to-date on the Lab Safety Comprehensive training.

If using the material outside of a containment device such as a fume hood or a glove box, employee must receive hands-on instruction for an experienced senior member of the laboratory (Principal Investigator or the person the PI delegates this training) and must be closely supervised until safe work practices are consistently demonstrated. This training must be documented so that proof of training is available upon request.

**Documentation of Training** (signature of all users is required)

* Prior to conducting any work with acutely toxic materials designated personnel must provide training to his/her laboratory personnel specific to the hazards involved in working with this substance, work area decontamination, and emergency procedures.
* The Principal Investigator must provide this SOP and a copy of the SDS (can be available online) available to all laboratory personnel.
* The Principal Investigator must ensure that his/her laboratory personnel have attended appropriate laboratory safety training or refresher training.

**Principal Investigator SOP Approval**

By signing and dating here the designee certifies that the Standard Operating Procedure (SOP) for acutely toxic materials is accurate and effectively provides standard operating procedures for laboratory personnel.

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Signature Printed Name/Title Date

I have read and understand the content of this SOP:

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| **Name** | **Signature** | **Date** |
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