

Standard Operating Procedure

Chemical name: Click here to enter text.

This is an SOP template and is not complete until:

1. Lab specific information is entered into the box below.
2. Lab specific protocol and procedure is added to the protocol and procedure section.
3. SOP has been signed and dated by the PI and relevant lab personnel.

Print a copy and insert into your **Laboratory Safety Manual and Chemical Hygiene Plan**. Refer to instructions for assistance.

School and department:	Click here to enter text.		
SOP preparation date:	Click here to enter a date.	SOP approval date:	Click here to enter a date.
Principal investigator:	Click here to enter text.		
Lab manager name:	Click here to enter text.		
Laboratory phone:	Click here to enter text.	Office phone:	Click here to enter text.
Emergency contact:	Click here to enter text.	Contact phone:	Click here to enter text.


Laboratory locations covered by this SOP – building and room number
Click here to enter text.

Type of SOP	<input type="checkbox"/> Process	<input type="checkbox"/> Hazardous chemical	<input type="checkbox"/> Hazardous class
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Purpose

Click here to enter text.

Physical and chemical properties and definition of chemical group

CAS:	Click here to enter text.	
Class:	Click here to enter text.	
Molecular formula:	Click here to enter text.	
Form or physical state:	Click here to enter text.	
Color:	Click here to enter text.	
Boiling point:	Click here to enter text.	

Potential hazards and toxicity

Potential health effects	
Target organs:	Click here to enter text.
Inhalation:	Click here to enter text.
Skin:	Click here to enter text.
Eyes:	Click here to enter text.
Ingestion:	Click here to enter text.

Personal protective equipment, PPE

Respiratory protection

Respirators should be used only under any of the following circumstances:

- An employer requires the use of a respirator.
- As a last line of defense. I.e., after engineering and administrative controls have been exhausted.
- As PPE in the event of a chemical spill clean-up process.
- Regulations require the use of a respirator.
- There is potential for harmful exposure due to an atmospheric contaminant in the absence of permissible exposure limit or PEL.
- When PEL has exceeded or when there is a possibility that PEL will be exceeded.

Lab personnel intending to use/wear a respirator mask must be trained and fit-tested by EHS. This is a regulatory requirement.

asu.edu/ehs/documents/asu-respiratory-protection-plan.pdf

Hand protection

Note: Consult with your preferred glove manufacturer to ensure that the gloves you plan on using are compatible with the respective chemical.

Refer to glove selection chart from the links below:

- ansellpro.com/download/Ansell_8thEditionChemicalResistanceGuide.pdf
- allsafetyproducts.biz/page/74172
- mapaglove.com/
- showabestglove.com/site/default.aspx

Eye protection

- Wear chemical splash goggles or a face shield to protect from splash hazards and chemical vapors.

Preceding information may change based on specific guidance for the hazardous material.

Skin and body protection

- Close-toe rubber or leather shoes.
- Full-length pants.
- Lab coat and natural rubber apron.

Preceding information may change based on specific guidance for the hazardous material.

Hygiene measures

Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product.

Preceding information may change based on specific guidance for the hazardous material.

Engineering controls

All operations involving benzene and dilutions should be carried out in a ventilated enclosure fume hood to keep airborne concentrations below recommended exposure limits. Chemical fume hoods used as containment areas for particularly hazardous chemicals must have a face velocity of 100 cfm, 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.

Preceding information may change based on specific guidance for the hazardous material.

First Aid Procedures

If inhaled, move to fresh air. If the person is not breathing, give artificial respiration. Avoid mouth to mouth contact. Call 911 from a campus phone or 480-965-3456. Call EHS at 480-965-1823.

Preceding information may change based on specific guidance for the hazardous material.

In case of skin contact, remove all contaminated clothing. Immediately (within seconds) flush affected area for 15 minutes. Call 911 from a campus phone or 480-965-3456 from a cell phone. Call EHS at 480-965-1823.

Include specific first aid information if recommended by specific guidance for the hazardous material.

In case of eye contact, use nearest emergency eyewash immediately. Call 911 from a campus phone or 480-965-3456 from a cell phone. Call EHS at 480-965-1823.

Preceding information may change based on specific guidance for the hazardous material.

If swallowed, do not induce vomiting. Never give anything by mouth to an unconscious person. Call 911 from a campus phone or 480-965-3456 from a cell phone. Call EHS at 480-965-1823.

Preceding information may change based on specific guidance for the hazardous material.

Special storage and handling requirements

Storage

- Ensure the container is tightly closed at all times.

Preceding information may change based on specific guidance for the hazardous material.

Handling

- Ensure you are wearing the following minimum PPE: tightly fitting safety goggles and face shield, lab coat & natural rubber apron, full length pants, close-toe rubber or leather shoes, gauntlet style (or arm length) natural rubber gloves over a pair of nitrile gloves.
- Lab emergency contact information must be readily posted. Easy access to a cellular phone or land line is readily available.
- The lab where the material is being handled has an approved / certified emergency eyewash and safety shower.

Preceding information may change based on specific guidance for the hazardous material.

Spill and Accident Procedure

Personal precautions

Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Do not attempt clean-up without minimum PPE.

Environmental precautions

Prevent further leakage or spillage – if safe to do so. Do not allow product to enter drains.

Methods and materials for containment and clean-up

Consider material compatibility prior to clean-up. Verify spill kit is available.

1. Immediately assess amount spilled, follow posted ASU Emergency Response Guide procedures for hazardous materials incidents.
2. If a chemical exposure has occurred, a fellow lab worker shall call 911 and EHS at 480-965-1823.
3. Don compatible gloves and other protective PPE if not already being worn.
4. Secure and restrict access to the area of the spill to prevent spread of the chemical.
5. Use the available spill kit to stop and contain the spill. Bag the collected material.
6. Label and tag as hazardous waste and submit a pick-up request to EHS using EHS Assistant.

Preceding information may change based on specific guidance for the hazardous material.

Decontamination and waste disposal procedure

Label waste

- Attach a completed ASU Hazardous Waste tag to all waste containers as soon as the first drop of waste is added to the container.

Store waste

- Double-bag dry waste using sealable transparent bags.
- Store hazardous waste in closed containers, in secondary containment and in a designated storage location.
- Waste must be under the control of the person generating and disposing of it.

Dispose of waste

- Contact ASU EHS at 480-965-1823 with questions.
- Dispose of regularly generated chemical waste within 90 days.
- Use EHS Assistant online hazardous waste pick-up request system.

Preceding information may change based on specific guidance for the hazardous material.

Protocol and procedure

Laboratory-specific procedures

Add your lab's specific procedures in this section.

[Click here to enter text.](#)

Important note: Any deviation from this SOP requires advance PI approval.

Documentation of training

- Prior to conducting any work with this material, Principal Investigator or designee must provide to his or her laboratory personnel specific to the hazards involved in working with this substance, work area decontamination, and emergency procedures.
- The Principal Investigator must provide his/her laboratory personnel with a copy of this SOP and a copy of the Safety Data Sheet or SDS provided by the manufacturer.
- The Principal Investigator must ensure that his/her laboratory personnel have attended appropriate/required laboratory safety training or refresher training within the last one year.

I have read and understand the content of this SOP.

Employee name	ASU affiliate no.	Signature	Date