

**Standard Operating Procedure for Using Benzene**

Print a copy and keep with your Safety Data Sheets and training documents.

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| Department |  |
| Principal Investigator (PI) |  |
| PI Phone Number |  |
| Lab Manager |  |
| Lab Manager Phone Number |  |
| Emergency Contact |  |
| Emergency Contact Phone Number |  |

1. **Purpose**

The purpose of this document is to provide the information necessary to safely use benzene in the \_\_\_\_\_\_\_\_\_\_\_ laboratory and to comply with requirements of the UNM Benzene Safety Program and OSHA standard 29 CFR 1910 Subpart Z ([29 CFR 1910.1028](https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1028)).

1. **Hazard Identification:**

* *Fire and Explosion Hazard* -- Benzene poses a high fire and explosion hazard when exposed to heat or flame. Benzene is classified as a Category 2 flammable liquid by the Global Harmonization System. Class 2 flammable liquids have flash points of less than 0°F and can be ignited under almost all ambient temperature conditions.
* *Health Hazard* -- Benzene is classified as a known carcinogen by the EPA. Benzene may affect the body through inhalation, skin/eye contact or accidental ingestion. Benzene exposure is associated with drowsiness, dizziness, headaches, and eye, skin and respiratory tract irritation. Repeated benzene exposure may increase the incidence of blood disorders such as anemia and leukemia.

1. **Engineering & Administrative Controls**

Benzene must only be handled/used within the chemical fume hood, which is designed to pull air and fumes up and away from the user (Engineering Control).

All lab personnel who use benzene must be trained on the hazards of benzene, including being familiar with this SOP and the UNM Benzene Safety Program (Administrative Control).

The door to the \_\_\_\_\_\_\_\_\_\_\_ lab is posted with signage indicating the presence and hazards associated with benzene (Administrative Control).

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

* *Hand Protection*: Gloves must be worn when handling benzene. Gloves made of nitrile or PVC are suitable for handling benzene.
* *Eye Protection*: Safety glasses or splash goggles must be worn when handling benzene.
* *Skin and Body Protection*: A lab coat must be worn when handling benzene.
* *Respiratory Protection*: Benzene must only be used in the chemical fume hood. Do not open, pour, etc. benzene anywhere other than the chemical fume hood.

1. **Standard Operating Procedures for Handling Benzene:** 
   1. Benzene should always be used in a fume hood, glove box, or completely-sealed containers. (Wear appropriate PPE as listed above)
   2. Store in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition.
   3. As they deem necessary, the PI/supervisor should insert here any information about whether a special use-area is designated for this material/process.
   4. Add appropriate lab-specific information here describing how this material(s) is generally used. E.g., name of protocol, typical frequency done, quantities used, temperature and any additional safety measures, etc.
2. **Chemical Disposal**

All chemical waste must be disposed of in accordance with Federal and State regulations and UNM’s Chemical Hygiene Plan. Benzene and benzene-containing wastes should be collected in suitable containers and properly labeled as soon as waste is added to the containers. Benzene waste should be labeled as such:

**HAZARDOUS WASTE**

**Benzene waste**

**Toxic, Flammable**

Call EHS at 277-2753 to schedule a pickup of benzene waste and/or other chemical waste.

1. **Spill Procedures:**

For small/minor spills (<1L), use the materials in the spill kit to clean up the spill. Minimum PPE for cleaning up a benzene spill is safety glasses/goggles, gloves and lab coat. The spill clean-up materials must be double-bagged, tightly closed, labeled and picked up by EH&S for disposal.

Spills in excess of 1L of benzene should not be cleaned up by lab personnel. In the event of a large/major spill of benzene, evacuate the area and call:

* Campus Police -- 911 on a landline or 505-277-2241 on a mobile phone, and
* Environmental Health & Safety (EH&S) – 505-277-2753 during business hours, or
* EH&S Duty Officer Pager -- 505-951-0194 (enter your phone number after the message)

1. **First Aid Procedures**

In the event of a benzene exposure, seek immediate medical attention.

* Skin Contact and Eye Contact should be washed immediately in safety shower or eyewash respectively for 15 minutes.
* If the exposure is severe, seek medical attention at the emergency room. If heading to UNMH, a non-injured person should contact the UNMH charge nurse in advance at 505-604-9349 with information on the chemical and nature of exposure.
* UNM employees should contact Employee Occupational Health Services (EOHS) at 505-272-8034.
* UNM students should contact Student Health Services at 505-277-7810.
* If the exposure occurs after hours, employees and students should seek medical treatment at a hospital emergency room.
* The supervisor of the injured person and EH&S must be notified as soon as possible after the exposure.
* The notice of Accident, Incident, or Spill form should be filled out on the EH&S website.

1. **Other Emergencies**

**Fire or Medical Emergency -- Dial 911**

**Life-Threatening Emergency, After Hours, Weekends and Holidays** – **Dial 911**

**Non-Life Threatening Emergency** – Call EH&S at 505-277-2753 to seek assistance and report the incident.

1. **Training Requirements**

All lab personnel who use benzene must take the following trainings:

* UNM Benzene Safety Program (available from EHS)
* Benzene Online Module (available on Learning Central)
* Benzene SOP

**Principal Investigator SOP Approval**

By signing and dating here, the Principal Investigator certifies that this Standard Operating Procedure (SOP) for Using Benzene is accurate and provides information sufficient to safely use benzene in the \_\_\_\_\_\_\_\_\_\_\_ laboratory.

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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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