

**Standard Operating Procedure for Using Ethidium Bromide  
in the PI Name Lab (Bldg#, Room#)**

Print a copy and keep with your lab’s training documents.

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| Department |  |
| Principal Investigator (PI) |  |
| PI Phone # |  |
| Lab Manager/Secondary Contact |  |
| Secondary Contact Phone # |  |
| Emergency/24-Hour Contact |  |
| Emergency Contact Phone # |  |

1. **Purpose**

The purpose of this document is to provide the information necessary to safely use Ethidium Bromide in the PI Name Laboratory.

1. **Hazard Identification**

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*Inhalation Hazard* -- Ethidium bromide is acutely toxic. Although toxicity by ingestion is only moderate, **toxicity by inhalation is quite high and can be fatal**. It is also irritating to the eyes, skin and mucous membranes.

*Mutagen Hazard*-- Ethidium bromide has been shown to be strongly mutagenic in vitro. It should therefore be assumed to be a carcinogen and a reproductive toxin.

1. **Training Requirements**

All UNM personnel who use ethidium bromide must be trained before using it. Training must include:

* This SOP (read and sign)

1. **Engineering & Administrative Controls**

Ethidium bromide 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 ethidium bromide must be trained on the hazards of ethidium bromide, including being familiar with this SOP (Administrative Control).

The door to the PI Name Lab is posted with signage indicating the presence and hazards associated with ethidium bromide (Administrative Control).

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

* *Hand Protection*: Nitrile gloves are adequate protection. Proper glove removal technique is imperative (i.e. remove without touching glove’s outer surface).
* *Eye Protection*: Safety glasses or splash goggles must be worn when handling ethidium bromide.
* *Skin and Body Protection*: A lab coat must be worn when handling ethidium bromide.
* *Respiratory Protection*: Ethidium bromide must only be used in the chemical fume hood. Do not open, pour, etc. ethidium bromide anywhere other than the chemical fume hood.

1. **Standard Operating Procedures for Handling Ethidium Bromide in the PI Name Lab:** 
   1. Put on proper PPE (glasses, gloves, lab coat).
   2. Remove ethidium bromide container from storage location and place in fume hood.
   3. Continue listing the steps of the procedure in which ethidium bromide is used in this lab (i.e. how to weigh material, quantity used, etc.)
   4. Avoid generating dusts or aerosols.
   5. Close container of ethidium and replace in storage location.
   6. After removing gloves, wash hands thoroughly.
2. **Spill Procedures**

For small/minor spills (<1L), use the materials in your lab’s spill kit to clean up a spill of ethidium bromide. Minimum PPE for cleaning up a 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 EHS for disposal.

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

* UNM Police -- 911 or 505-277-2241, and
* Environmental Health & Safety (EHS) – 505-277-2753 during business hours, or
* EHS Duty Officer Pager (after hours) -- 505-951-0194 (enter your phone number after the message)

1. **First Aid Procedures:**

In the event of an ethidium bromide exposure:

* Skin or eye contact - wash immediately in safety shower or eyewash 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 and inform them of the situation.
* 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. **Disposal Procedures**

Ethidium bromide wastes (liquids, gels, solids) should be collected in a suitable container (plastic or glass is acceptable) and properly labeled as soon as waste is added to the container. Ethidium bromide waste should be labeled as such:

**HAZARDOUS WASTE**

**Ethidium Bromide Waste   
(include all components such as agar gels, water, etc. and concentrations/volumes)  
Toxic**

1. **Other Emergencies**

* **Fire or Medical Emergency -- 911 or 505-277-2241 (UNM Police)**
* **Life-Threatening Emergency, After Hours, Weekends and Holidays** – **911**
  + **EHS After Hours Duty Officer Pager – 505-951-0194** (enter return phone # after the outgoing message)
* **Non-Life-Threatening Emergency** – Call EHS at 505-277-2753 for assistance and/or to report the incident.

**Principal Investigator SOP Approval**

By signing and dating here, the Principal Investigator certifies that this Standard Operating Procedure (SOP) for Using ethidium bromide is accurate and provides information sufficient to safely use ethidium bromide in the PI Name Lab.

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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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