

**Standard Operating Procedure for Using Diazomethane**

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 diazomethane in the \_\_\_\_\_\_\_\_\_\_\_ laboratory and to comply with the OSHA standard 29 CFR 1910 Subpart Z ([CAS 57-12-5](https://www.osha.gov/chemicaldata/chemResult.html?recNo=787)).

1. **Hazard Identification:**
* ***Extremely Toxic!!*** *--* Diazomethane vapor causes severe irritation of the skin, eyes, mucous membranes and lungs. Symptoms include pulmonary edema, which can be fatal. It is a strong sensitizer, so repeated or prolonged exposure can cause fever and asthma-like symptoms at concentrations that previously caused no symptoms. These asthma-like symptoms can also be fatal.
* *Explosion Hazard* -- Diazomethane is readily flammable and can explode easily. Explosion can be caused by contact with rough surfaces such as ground glass joints, etched or scratched flasks, and glass tubing that has not been fire-polished. Direct sunlight and strong artificial light may also cause explosions. Violent reactions may occur on exposure of diazomethane to alkali metals.
1. **Engineering & Administrative Controls**

Diazomethane 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 diazomethane must be trained on the hazards of diazomethane, including being familiar with this SOP (Administrative Control).

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

1. **Personal Protective Equipment (PPE)**
* *Hand Protection*: Neoprene gloves are acceptable for incidental exposure. Butyl rubber or Viton gloves are preferable if the loss of manual dexterity they cause is acceptable.
* *Eye Protection*: Safety glasses or splash goggles must be worn when handling diazomethane.
* *Skin and Body Protection*: A lab coat must be worn when handling diazomethane.
* *Respiratory Protection*: Diazomethane must only be used in the chemical fume hood. Do not open, pour, etc. Diazomethane anywhere other than the chemical fume hood.
1. **Standard Operating Procedures for Handling Diazomethane:**
	1. Diazomethane should be handled in solution using glassware specially designed for diazomethane
		1. (e.g. with Clear-Seal joints) and should be used as soon as possible after preparation. Storage of diazomethane solutions, even at low temperature, is not advisable.
	2. As they deem necessary, the PI/supervisor should insert here any information about whether a special use-area is designated for this material/process.
	3. 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 according to federal and state regulations and UNM's Chemical Hygiene Plan. Diazomethane and diazomethane-containing wastes should be placed in a suitable container and properly labeled as soon as waste is added to the container. Diazomethane waste should be labeled as such:

**HAZARDOUS WASTE**

**Diazomethane waste**

**Toxic, Reactive, Flammable**

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

1. **Spill Procedures:**

If diazomethane is spilled **turn off all ignition sources.**

For small/minor spills (<1L), use the materials in the spill kit to clean up the spill. Minimum PPE for cleaning up a diazomethane 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 diazomethane should not be cleaned up by lab personnel. In the event of a large/major spill of diazomethane, 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 diazomethane 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 diazomethane must take the following trainings:

* Diazomethane SOP

**Principal Investigator SOP Approval**

By signing and dating here, the Principal Investigator certifies that this Standard Operating Procedure (SOP) for Using Diazomethane is accurate and provides information sufficient to safely use diazomethane 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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