

**Standard Operating Procedure for Using TMS 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 TMS Diazomethane in the \_\_\_\_\_\_\_\_\_\_\_ laboratory and to comply with OSHA standard 29 CFR 1910 Subpart Z ([CAS# 334-88-3](https://www.osha.gov/chemicaldata/chemResult.html?recNo=357)).

1. **Hazard Identification:**

*Flammable / Toxic* –

(Trimethylsilyl)diazomethane (TMSD) is a flammable liquid that is very toxic when inhaled. Inhalation can cause pulmonary edema, which can be fatal. It may be harmful if ingested or absorbed through the skin. It causes respiratory tract, skin, and eye irritation. Symptoms may be delayed for hours. It is suspected to cause cancer and damage to fertility. It is regarded as a less explosive alternative to diazomethane, but it should still be handled with care. Two reports of exposure to TMSD resulted in death, both from respiratory distress (as of 2011).

TMSD in alcoholic solvents under basic or acidic conditions can lead to the formation of the much more toxic and explosive diazomethane.

1. **Engineering & Administrative Controls**

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

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

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

* *Hand Protection*: At a minimum complete protection of the skin is essential. Nitrile gloves are recommended.
* *Eye Protection*: Safety glasses or splash goggles must be worn when handling TMSD. A face shield is recommended.
* *Skin and Body Protection*: A lab coat must be worn when handling TMSD.
* *Respiratory Protection*: TMSD should always be used in fume hood

1. **Standard Operating Procedures for Handling TMSD:** 
   1. Completely avoid inhaling TMSD vapors. Avoid contact with skin and eyes. Keep away from sources of ignition.
   2. Avoid extremes of temperature and direct sunlight. Incompatible with oxidizing agents such as chlorine, fluorine and perchlorates.
   3. TMSD in alcoholic solvents under basic or acidic conditions can lead to the formation of the much more toxic and explosive diazomethane.
   4. As they deem necessary, the PI/supervisor should insert here any information about whether a special use-area is designated for this material/process.
   5. 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. TMSD and TMSD-containing wastes should be collected in suitable containers and properly labeled as soon as waste is added to the containers. TMSD waste should be labeled as such:

**HAZARDOUS WASTE**

**TMS Diazomethane Waste**

**Flammable & Toxic**

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

1. **Spill Procedures:**

For small/minor spills (<1L) inside the fume hood, use the materials in the spill kit to clean up the spill. Minimum PPE for cleaning up a TMSD 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 TMSD or smaller spills outside the fume hood, should not be cleaned up by lab personnel. In the event of a large/major spill of TMSD, 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 TMSD 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.

**Training Requirements**

All lab personnel who use TMSD must review the lab specific TMSD SOP before beginning work.

**Principal Investigator SOP Approval**

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