

Standard Operating Procedure

Methylene Chloride / Dichloromethane

This is an SOP template and is not complete until:

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

Section 1 – Lab-Specific Information

Building/Room(s) covered by this SOP:	_____
Department:	_____
Principal Investigator Name:	_____
Principal Investigator Signature:	_____

Section 2 – Hazards

Methylene chloride is an OSHA regulated carcinogen. It is an acutely toxic liquid that is extremely harmful if inhaled or absorbed through the skin. Methylene chloride is toxic to the liver, pancreas, blood, central nervous system, heart, and kidneys.

Exposure Limits:

OSHA PEL (8 HR. TWA):	25 ppm
OSHA Short Term Exposure Limit:	125 ppm
ACGIH TLV/TWA:	50 ppm
EPA ECEL:	2 ppm
EPA STEL:	16 ppm



Section 3 – Engineering Controls and Personal Protective Equipment (PPE)

Engineering Controls: Use of Methylene chloride must be conducted in a properly functioning chemical fume hood. The chemical fume hood must be approved and certified within the past 12 months.

Hygiene Measures: Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product. Remove any contaminated clothing and wash before reuse.

Hand Protection: Chemical-resistant gloves must be worn, polyvinyl acetate, Viton, or fluorinated rubber gloves are recommended. Nitrile and latex disposable gloves are NOT suitable. **NOTE:** Consult with your preferred glove manufacturer to ensure that the gloves you plan on using are compatible with the specific chemical being used.

Eye Protection: ANSI approved properly fitting safety glasses or chemical splash goggles are required. A face shield may also be appropriate depending on the specific application.

Skin and Body Protection: Laboratory coats must be worn and be appropriately sized for the individual and buttoned to their full length. Personnel must also wear full length pants, or equivalent, and close-toed shoes. Full length pants and close-toed shoes must be worn at all times by all individuals that are occupying the laboratory area. The area of skin between the shoe and ankle must not be exposed.

Respiratory Protection: If methylene chloride is being used outside of a chemical fume hood with the sash lowered, respiratory protection may be required. A supplied-air respirator or self-containing breathing apparatus (SCBA) are the only permissible types of respiratory protection. Use of respiratory protection must take place in accordance with the requirements of the institutional Respiratory Protection Program and include medical approval to wear a respirator, annual fit testing (for tight-fitting respirators) and annual training.

Section 4 – Special Handling and Storage Requirements

- Handle in accordance with requirements established in the Methylene Chloride Exposure Control Plan.
- Considering limiting the handling of methylene chloride to only a designated area. The area should be posted with a “Caution, Carcinogen, Reproductive Toxins, or Extremely Toxic Chemicals” label.
- Avoid contact with skin and eyes and inhalation.
- Keep containers tightly closed.
- Store in a cool, dry and well-ventilated area away from incompatible substances such as oxidizers.
- Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- A suitable storage location is a flammable storage cabinet or lab cabinet that does not contain incompatibles.

Section 5 – Spill and Accident Procedures

Immediately evacuate area and ensure others are aware of the spill. If there is an imminent threat of a fire, pull the nearest fire alarm station to evacuate the building and dial **683-4000 / 011**. If personnel have become exposed and need medical assistance, dial **683-4000 / 911**. If the spill is minor and does not pose a threat to personnel, immediately evacuate the area. Small volume spills will rapidly evaporate. Do not re-enter the space until adequate time has passed to allow laboratory dilution ventilation to reduce the concentration below a level at which methylene chloride odor is no longer noticeable. Contact the institutional spill response team for assistance during normal business hours (Monday – Friday, 7 AM – 4 PM) for spill cleanup assistance (dial 911 if spill occurs after hours and assistance is needed).

Section 6 – Waste Disposal Procedures

Store hazardous waste in closed containers that are properly labeled, and in a designated area (flammable cabinet is recommended) away from incompatible chemicals. When waste containers have been filled to 90% capacity or are no longer being filled and ready for removal from the work area request a hazardous waste pickup.

Section 7 – Protocol (Add lab specific Protocol here)

Section 8 – Documentation of Training (signature of all users is required)

Prior to conducting any work with methylene chloride, the Principal Investigator must ensure that all laboratory personnel receive training on the content of this SOP.

I have read and understand the content of this SOP: _____

Name (please print)

Principal Investigator

Signature

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