

## Standard Operating Procedure: Use of Methylene Chloride

### Laboratory Information

Department:	
Principal Investigator(s):	
Laboratory Manager/Supervisor (or designated laboratory-specific chemical hygiene officer):	
Laboratory emergency contact (name and phone):	
Laboratory phone:	
Designated area (s) of these procedures with chemicals(s): (building and room):	
Agent storage location (building and room) and specifics regarding location/container/cabinets:	

### Chemical Information

Chemical Name(s), including CAS No:	Methylene chloride CAS 75-09-2  Synonym(s): Dichloromethane, Methylene dichloride
<b>GHS Classification and Hazard Statements (see SDS sheet provided by the chemical's manufacturer):</b>  <div style="text-align: center;">  </div> <p>EXPOSURE LIMIT (EPA ECEL): 2.0 ppm TWA 8 hours /ACTION LIMIT: 1.0 ppm            SHORT TERM EXPOSURE LIMIT (EPA): 16 ppm TWA 15 mins</p> <ul style="list-style-type: none"> <li>• Suspected of causing cancer [Warning Carcinogenicity]</li> <li>• Suspected of causing genetic defects [Warning Germ cell mutagenicity]</li> <li>• Harmful if swallowed [Warning Acute toxicity, oral]</li> <li>• Causes serious eye irritation [Warning Serious eye damage/eye irritation]</li> <li>• May cause respiratory irritation [Warning Specific target organ toxicity, single exposure; Respiratory tract irritation]</li> <li>• May cause drowsiness or dizziness [Warning Specific target organ toxicity, single exposure; Narcotic effects]</li> <li>• May causes damage to organs through prolonged or repeated exposure [Warning Specific target organ toxicity, repeated exposure]</li> </ul>	

**Signs and symptoms of exposure or release**

Irritating to the eyes, skin and respiratory tract. If swallowed the substance may cause vomiting and could result in aspiration pneumonitis. The substance may cause effects on the central nervous system, blood, liver, heart and lungs. Exposure could cause carbon monoxide poisoning. This may result in impaired functions. Exposure at high concentrations could cause lowering of consciousness and death. The effects may be delayed.

**Routes of exposure**

The substance can be absorbed into the body by inhalation, by ingestion and through the skin.

**Required engineering controls: (i.e., chemical fume hood, biological safety cabinet, glove box, temperature control, humidity control, shielding, luer-lock syringe, in-line HEPA filter, etc.)**

An eyewash and safety shower is required in the immediate working area.  
Work with methylene chloride requires the utilization of a certified chemical fume hood.

**Please describe the engineering controls used for procedures below:**

**Personal Protective Equipment (PPE) required for procedures:**

**WARNING: Methylene chloride readily penetrates standard nitrile laboratory gloves.** Compatible gloves for this chemical are polyvinyl alcohol, Silver Shield, laminate or Viton gloves. Wearing nitrile over silver shield gloves is also recommended for improved dexterity. Wearing a double pair of 8 mil nitrile gloves may be acceptable for short term procedures with unanticipated exposure.

Change gloves immediately if gloves become soiled, torn, or compromised.

A fully buttoned lab coat and eye protection suitable for procedures are required.

For splash risk or work with large amounts, ADD face shield with goggles, rubber apron (or impervious disposable gown/coverall).

**Please describe PPE used for procedures below**

**Known incompatibilities with chemical(s):**

Moisture, strong oxidizers, strong caustics, plastics, rubber, nitric acid, water + heat, and chemically active metals, such as aluminum and magnesium powder, sodium, potassium, and lithium.

**Special storage and handling considerations:**

Keep container in cool, well-ventilated area.  
Keep container tightly closed and sealed until ready for use. Avoid storing on the floor.  
Avoid ignition sources.

**Waste collection and disposal procedures:**

Waste chemicals shall be collected in a secured area. The area shall be free from evidence of spills. A Hazardous Waste label shall be affixed to the collection container and components shall be listed on the label as they are introduced into the container. **Do not date containers until the day of scheduled pickup.** Additionally, the container shall be marked with the hazard class of the chemical waste (i.e., Ignitable, Toxic, Reactive, Corrosive). When the container is no more than 2/3 full, date the container and submit a pick-up request in the university's waste ticketing system.

**Spill Procedure:**

**Notify lab personnel to vacate area until any spill outside of the fume hood is cleaned. Do NOT use double 8mm nitrile gloves for spills due to quick breakthrough time. To improve dexterity with laminate gloves, don a nitrile glove over a laminate glove. Decontaminate surfaces with a solution of soap and water.**

**Major spills of stock solution:**

Leave the area and notify others not to enter. Report the spill to the UK Environmental Quality Management Department (EQMD) at (859) 323- 6280 (M-F 8am-5pm) or after hours by dialing 911 from any on-campus phone or by contacting the UK Police at (859) 257-UKPD (8573).

**Minor spills of manageable amount:** If necessary, contact EQMD for guidance. Consult manufacturer's SDS for instructions and compatibilities for the chemical. Clean minor spills within the Chemical Fume Hood with an absorbent material and working from the outer perimeter of the spill inward. Wipe surface with solution of soap and water.

**Response procedures in the case of an incident or injury:**

## UK Employees:

- After receiving first aid (refer to the chemical's SDS), report the occupational exposure to a hazardous chemical to UK Worker's Care at 1-800-440-6285.
- If needed, an appointment will be made for the employee at UK UHS.
- For severe emergency or injury, call 911 or proceed to the UK Chandler Hospital Emergency Department

## UK Students:

- Call UHS at (859) 323-APPT to report an occupational exposure to a chemical hazard.
- If needed, an appointment will be made for the employee at UK UHS.

**For severe emergency or injury, call 911 or proceed to the UK Chandler Hospital Emergency Department**

**Flush exposed eyes or skin with water for at least 15 minutes, then seek medical attention.**

**If there is respiratory irritation associated with exposure, remove all persons from the contaminated area and call 911.**

**Please describe, in a stepwise fashion, the work practices and procedures involved in the handling and utilization of this agent.**

Please be clear and complete in the description of procedures (i.e., measuring, weighing, pouring, mixing, injection, mixing, transporting, administration to animals, heating, etc.).

Please attach additional pages, if necessary.

**Please attach a copy of the manufacturer's SDS for this agent to this SOP for reference by laboratory personnel.**

