
Methylene Chloride

(Dichloromethane)



Idaho State
University

Environmental Health,
Safety, and Sustainability

Standard Operating Procedure

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Potential Safety Hazards

Toxicity – Methylene chloride is probably carcinogenic to humans (Group 2A) according to the IARC. Exposure can harm the eyes, skin, liver, central nervous system, and heart. Symptoms of overexposure include drowsiness, dizziness, numbness, and nausea. Severe exposures may result in loss of consciousness and death. (Acute Toxicity: LD50 oral rat = 1,600 mg/kg)

Reactivity – Methylene chloride can react violently with strong oxidizers and will rapidly deteriorate some plastic and rubber products.

Safe Work Practices

Inventory Management

- Minimize the amount of methylene chloride stored in a laboratory.
- Utilize a less hazardous product than methylene chloride if possible. Keep in mind that substituting with a less toxic solvent may introduce a new hazard, such as flammability.

Engineering Controls

- Handle methylene chloride and methylene chloride containing solutions in an exhausted enclosure, such as a chemical fume hood or biosafety cabinet.

Chemical Hygiene

- Change gloves frequently, even if they do not appear to be contaminated.
- Wash hands each time after removing gloves.
- Prohibit all food and beverages in all chemical laboratories to minimize the risk of ingestion.

Personal Protective Equipment (PPE)

- Wear appropriate PPE when working with methylene chloride and methylene chloride solutions.
- Appropriate PPE includes the following:
 - eye protection

- hand protection
 - Methylene chloride readily passes through single layer nitrile gloves.
 - Two layers of nitrile glove may be worn if no contact or only incidental contact with methylene chloride is expected.
 - Polyethylene vinyl alcohol (PVA) gloves or other methylene chloride resistant gloves should be worn if contact with methylene chloride is expected.
- long pants
- closed toed shoes
- lab coat

Preparedness for a Methylene Chloride Spill

Spill Awareness

- Recognition of a methylene chloride spill typically involves visual observation of a colorless liquid with a strong sweet chemical odor.

Spill Response

- If greater than 100 mL is spilled...
 - Evacuate the area of the spill.
 - Notify Environmental Health Safety & Sustainability (if normal business hours).
 - Notify Public Safety (if after normal business hours).
- If 100 mL or less is spilled...
 - Maximize ventilation. Activate hoods and open windows if possible.
 - Wear appropriate personal protective equipment.
 - Absorb spilled liquid utilizing absorbent pads and/or absorbent material.
 - Dispose of collected liquid and contaminated material via EHSS.

Unneeded Material

- Manage methylene chloride, methylene chloride solutions, and contaminated items as hazardous waste and dispose via the Environmental Health Safety & Sustainability Department (<https://www.isu.edu/ehs/>).