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# Chloroform

## (Trichloromethane)



Idaho State  
University

Environmental Health,  
Safety, and Sustainability

### Standard Operating Procedure

Revision Date 1/19/2023

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## Potential Safety Hazards

*Toxicity* – Chloroform is possibly carcinogenic to humans (Group 2B) according to the IARC. Exposure can harm the eyes, skin, liver, and kidney. Symptoms of overexposure include headaches, drowsiness, dizziness, and nausea. Severe exposures may result in disorientation, loss of consciousness, and death. (Acute Toxicity: LD<sub>50</sub> oral rat = 908 mg/kg)

## Safe Work Practices

### *Inventory Management*

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

### *Engineering Controls*

- Handle chloroform and chloroform 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 chloroform and chloroform solutions.
- Appropriate PPE includes the following:
  - eye protection
  - hand protection
    - Chloroform readily passes through single layer nitrile gloves.
    - Two layers of nitrile glove may be worn if no contact or only incidental contact with chloroform is expected. Change gloves if contaminated.

- Wear Viton gloves over butyl gloves if significant contact with chloroform is expected.
- long pants
- closed toed shoes
- lab coat

## Preparedness for a Chloroform Spill

### *Spill Awareness*

- Recognition of a chloroform spill typically involves visual observation of a colorless liquid or detection of 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 chloroform, chloroform solutions, and contaminated items as hazardous waste and dispose via the Environmental Health Safety & Sustainability Department (<https://www.isu.edu/ehs/>).