



Health	2
Fire	1
Reactivity	0
Personal Protection	H

Material Safety Data Sheet

Methyl iodide MSDS

Section 1: Chemical Product and Company Identification

Product Name: Methyl iodide

Catalog Codes: 10957

CAS#: 74-88-4

RTECS: PA9450000

TSCA: TSCA 8(b) inventory: Methyl iodide

CI#: Not available.

Synonym: Iodomethane

Chemical Name: Methyl Iodide

Chemical Formula: CH₃-I

Contact Information:

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Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Methyl iodide	74-88-4	100

Toxicological Data on Ingredients: Methyl iodide: ORAL (LD50): Acute: 76 mg/kg [Rat]. VAPOR (LC50): Acute: 5000 mg/m³ 1 hours [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation (lung irritant). Slightly hazardous in case of skin contact (permeator). Severe over-exposure can result in death.

Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Classified A2 (Suspected for human.) by ACGIH. 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact: In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO₂). Iodide and Hydrogen iodide may be released when methyl iodide undergoes thermal decomposition.

Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances: Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Methyl iodide form an explosive reaction with trialkylphosphines and with silver chlorite

Section 6: Accidental Release Measures

Small Spill: Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill: Poisonous liquid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions: Keep locked up. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe gas/

fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.

Storage: Light Sensitive. Store in light-resistant container. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24°C (73.4°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection: Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: TWA: 12 (mg/m³) from ACGIH (TLV) [United Kingdom (UK)] TWA: 2 (ppm) from ACGIH (TLV) [United States] TWA: 2 (ppm) from NIOSH [United States] TWA: 10 (mg/m³) from NIOSH [United States] TWA: 12 (mg/m³) [Canada] TWA: 2 (ppm) [United Kingdom (UK)] TWA: 12 (mg/m³) [United Kingdom (UK)] TWA: 5 (ppm) from OSHA (PEL) [United States] TWA: 28 (mg/m³) from OSHA (PEL) [United States] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Pungent. Sweet. Ethereal.

Taste: Not available.

Molecular Weight: 141.95 g/mole

Color: Colorless. Clear

pH (1% soln/water): Not available.

Boiling Point: 42.5°C (108.5°F)

Melting Point: -66.5°C (-87.7°F)

Critical Temperature: 254.8°C (490.6°F)

Specific Gravity: 2.28 (Water = 1)

Vapor Pressure: 53.3 kPa (@ 20°C)

Vapor Density: 4.89 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 1.5

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, acetone.

Solubility: Soluble in acetone, benzene, carbon tetrachloride, and chloroform. Miscible in alcohol and ether. Partially soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, incompatibles

Incompatibility with various substances: Reactive with oxidizing agents.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Light Sensitive. It forms a violent reaction with oxygen at 300 to 500 C and with sodium (even in solution). Iodide and hydrogen iodide may be released when methyl iodide undergoes thermal decomposition (270 C). Forms extremely toxic compound with mercury.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation.

Toxicity to Animals: WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 76 mg/kg [Rat]. Acute toxicity of the vapor (LC50): 1300 mg/m³ 4 hours [Rat].

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified A2 (Suspected for human.) by ACGIH. 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation (lung irritant). Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Low Published Lethal Dose: LDL [Rabbit] - Route: Oral; Dose: 70 mg/kg

Special Remarks on Chronic Effects on Humans: May cause cancer based on animal data. Tumorigenic effects based on animal (equivocal tumorigenic agent by RTECS criteria)

Special Remarks on other Toxic Effects on Humans: Potential Acute Health Effects: Skin: Can irritate the skin causing a rash or burning feeling on contact. If absorbed through the skin, it may affect the blood, respiration, and gastrointestinal systems. Eyes: Can cause eye irritation. May cause conjunctivitis. Inhalation: Harmful if inhaled. Can cause respiratory tract irritation with coughing and/or shortness of breath. Higher exposures can cause a build-up of fluid in the lungs (pulmonary edema), with severe shortness of breath. Inhalation may also affect behavior/Central Nervous System (pallor, CNS depressant - symptoms including giddiness, dizziness, ataxia, sleepiness, irritability, drowsiness, incoordination, slurred speech, muscular twitching), gastrointestinal tract (vomiting, diarrhea) Ingestion: Harmful if swallowed. Causes gastrointestinal tract irritation with nausea, vomiting, diarrhea, and abdominal pain.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Methyl iodide UNNA: 2644 PG: I

Special Provisions for Transport: Poison inhalation hazard zone B

Section 15: Other Regulatory Information

Federal and State Regulations: California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Methyl iodide California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Methyl iodide Connecticut hazardous material survey.: Methyl iodide Illinois toxic substances disclosure to employee act: Methyl iodide Illinois chemical safety act: Methyl iodide New York release reporting list: Methyl iodide Rhode Island RTK hazardous substances: Methyl iodide Pennsylvania RTK: Methyl iodide Minnesota: Methyl iodide Massachusetts RTK: Methyl iodide Massachusetts spill list: Methyl iodide New Jersey: Methyl iodide New Jersey spill list: Methyl iodide New Jersey toxic catastrophe prevention act: Methyl iodide Louisiana spill reporting: Methyl iodide California - Director's list of Hazardous Substances: Methyl iodide TSCA 8(b) inventory: Methyl iodide SARA 313 toxic chemical notification and release reporting: Methyl iodide CERCLA: Hazardous substances.: Methyl iodide: 100 lbs. (45.36 kg)

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC): R21- Harmful in contact with skin. R23/25- Toxic by inhalation and if swallowed. R37/38- Irritating to respiratory system and skin. R40- Possible risks of irreversible effects. S36/37- Wear suitable protective clothing and gloves. S38- In case of insufficient ventilation, wear suitable respiratory equipment. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment: Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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