



METHYL IODIDE

1. Product Identification

Synonyms: Iodomethane

CAS No.: 74-88-4

Molecular Weight: 141.94

Chemical Formula: CH₃I

Product Codes: Y0021

2. Composition/Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
74-88-4	Iodomethane	>98	200-819-5

3. Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless to pale yellow liquid.

Danger! May be fatal if inhaled. Causes eye, skin, and respiratory tract irritation. Harmful if swallowed or absorbed through the skin. Light sensitive. May cause central nervous system effects.

Target Organs: Central nervous system, lungs, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation. Vapors cause eye irritation.

Skin: Causes skin irritation. Harmful if absorbed through the skin. A pad soaked in methyl iodide and held against the forearm for 10 minutes produced stinging and reddening; swelling and blistering appeared several hours later. Similar effects, including delayed burning, have been reported. When methyl iodide was not held against the skin, but allowed to evaporate, no effects were observed.

Ingestion: Harmful if swallowed. May cause irritation of the digestive tract. May cause effects similar to those for inhalation exposure.

Inhalation: Causes respiratory tract irritation. In humans, acute exposure to methyl iodide by inhalation may depress the central nervous system (CNS), irritate the lungs and skin, and affect the kidneys. Massive acute inhalation exposure to methyl iodide has led to pulmonary edema. Acute inhalation exposure of humans to methyl iodide has resulted in nausea, vomiting, vertigo, ataxia (failure of muscular coordination), slurred speech, drowsiness, skin blistering, and eye irritation. Severe, prolonged and possibly permanent injury to the nervous system (mental dullness, hallucination) has been reported.

Chronic: Chronic inhalation may cause effects similar to those of acute inhalation. Animal studies have reported the development of tumors. Chronic or long-term exposure of humans to methyl iodide by inhalation may affect the CNS and cause skin burns. (EPA Air Toxics

4. First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing

and shoes. Get medical aid immediately. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: POISON material. If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

5. Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance is noncombustible.

Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower:N/A

Upper: N/A

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 0

6. Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Provide ventilation. Evacuate unnecessary personnel.

7. Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Do not get in eyes, on skin, or on clothing. Do not breathe vapor. Use only with adequate ventilation or respiratory protection.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from light.

8. Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Iodomethane	2 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous route	2 ppm TWA; 10 mg/m ³ TWA 100 ppm IDLH	5 ppm TWA; 28 mg/m ³ TWA

OSHA Vacated PELs: Iodomethane: 2 ppm TWA; 10 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless to pale yellow

Odor: Sweet, ethereal

pH: Not available.

Vapor Pressure: 375 mm Hg @ 20 deg C
Vapor Density: 4.89 (air = 1)
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 42.5 deg C @ 760 mmHg
Freezing/Melting Point: -66 deg C
Decomposition Temperature: 270 deg C
Solubility: 14 g/1000 ml @ 20°C
Specific Gravity/Density: 2.28 @ 20°C
Molecular Formula: CH₃I
Molecular Weight: 141.94

10. Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. May discolor on exposure to light. Turns reddish-brown on exposure to light.

Conditions to Avoid: Light, moisture, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, hydrogen iodide, iodide.

Hazardous Polymerization: Will not occur.

11. Toxicological Information

RTECS#:

CAS# 74-88-4: PA9450000

LD50/LC50:

CAS# 74-88-4:

Dermal, guinea pig: LD50 = 800 mg/kg;
Draize test, rabbit, eye: 100 mg Severe;
Draize test, rabbit, skin: 500 mg Severe;
Inhalation, mouse: LC50 = 5 gm/m³/57M-C;
Inhalation, mouse: LC50 = 5000 mg/m³/57M;
Inhalation, rat: LC50 = 1300 mg/m³/4H;
Oral, rat: LD50 = 76 mg/kg;

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Carcinogenicity:

CAS# 74-88-4:

- **ACGIH:** Not listed.
- **California:** carcinogen, initial date 4/1/88
- **NTP:** Not listed.
- **IARC:** Not listed.

Epidemiology: Because the increase in lung tumors seen in Strain A mice is not statistically significant, ACGIH recommends that methyl iodide carry no carcinogenicity notation.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Mutagenicity: Mutation data has been reported.

Neurotoxicity: No information available.

Other Studies:

12. Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: Naturally produced by photosynthetic marine organisms. On land, volatilizes rapidly. In atmosphere, degradation half-life is 3-7 hours. Will not bioconcentrate.

Physical: No information available.

Other: log octanol/water partition coefficient (log K_{ow}) is 1.51.

13. Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series:

CAS# 74-88-4: waste number U138.

14. Transport Information

	US DOT	Canada TDG
Shipping Name:	METHYL IODIDE	METHYL IODIDE
Hazard Class:	6.1	6.1
UN Number:	UN2644	UN2644
Packing Group:	I	I

15. Regulatory Information

US FEDERAL

TSCA

CAS# 74-88-4 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 74-88-4: 100 lb final RQ; 45.4 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 74-88-4: immediate, delayed.

Section 313

This material contains Iodomethane (CAS# 74-88-4, >98%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 74-88-4 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

CAS# 74-88-4 is considered highly hazardous by OSHA.

STATE

CAS# 74-88-4 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Iodomethane, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

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Risk Phrases:

- R 21 Harmful in contact with skin.
- R 23/25 Toxic by inhalation and if swallowed.
- R 37/38 Irritating to respiratory system and skin.
- R 40 Limited evidence of a carcinogenic effect.

Safety Phrases:

- S 36/37 Wear suitable protective clothing and gloves.
- S 38 In case of insufficient ventilation, wear suitable respiratory equipment.
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 74-88-4: 2

Canada - DSL/NDSL

CAS# 74-88-4 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1A, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 74-88-4 is listed on the Canadian Ingredient Disclosure List.

16. Other Information

Product Use:

Laboratory Reagent.

Revision Information:

Jan. 2008.

Disclaimer:

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