Chemical Safety Data Sheet MSDS / SDS

Iodomethane SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: Iodomethane

CAS: 74-88-4

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 3, Oral
Acute toxicity - Category 4, Dermal

Skin irritation, Category 2
Acute toxicity - Category 3, Inhalation
Specific target organ toxicity – single exposure, Category 3
Carcinogenicity, Category 2

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H301 Toxic if swallowed
H312 Harmful in contact with skin
H315 Causes skin irritation
H331 Toxic if inhaled
H335 May cause respiratory irritation
H351 Suspected of causing cancer

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P203 Obtain, read and follow all safety instructions before use.

Response

P301+P316 IF SWALLOWED: Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P317 Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.
P332+P317 If skin irritation occurs: Get medical help.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P316 Get emergency medical help immediately.
P319 Get medical help if you feel unwell.
P318 IF exposed or concerned, get medical advice.

Storage

P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Iodomethane
Common names and synonyms:	Iodomethane
CAS number:	74-88-4
EC number:	200-819-5
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer immediately for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Give a slurry of activated charcoal in water to drink. Refer immediately for medical attention.

Most important symptoms/effects, acute and delayed

Inhalation of vapor causes lung congestion and pulmonary edema. Higher concentrations causes rapid narcosis and death. Contact with liquid irritates eyes and burns skin. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Flush eyes thoroughly with water and wash contaminated areas of body with soap and water. Treat skin burns as usual.

SECTION 5: Firefighting measures

Suitable extinguishing media

Self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive-pressure mode.

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Toxic and irritating gases are generated when exposed to fire or heat. Behavior in Fire: Containers may explode (USCG, 1999)

Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: self-contained breathing apparatus. Collect leaking and spilled liquid

in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: self-contained breathing apparatus. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

1. ventilate area of spill or leak. 2. collect for reclamation or absorb in vermiculite, dry sand, earth, or similar material.

SECTION 7: Handling and storage

Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Provision to contain effluent from fire extinguishing. Separated from strong oxidants and food and feedstuffs. Well closed. Ventilation along the floor. Store in an area without drain or sewer access.Keep containers closed and store in a dark place.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 2 ppm as TWA; (skin).MAK: skin absorption (H); carcinogen category: 2

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and

the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Methyl iodide is a colorless liquid that turns brown on exposure to light. Denser than water. Contact may irritate skin, eyes and mucous membranes. Very toxic by ingestion, inhalation and skin absorption.
Colour:	Colorless, transparent liquid (turns brown on exposure to light)
Odour:	Pungent, ether-like odor.
Melting point/freezing point:	252°C(dec.)(lit.)
Boiling point or initial boiling point and boiling range:	41-43°C(lit.)
Flammability:	Noncombustible Liquid
Lower and upper explosion limit/flammability limit:	no data available

Flash point:	-18°C
Auto-ignition temperature:	355°C
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	0.606 cP at 0 deg C, 0.424 cP at 40 deg C.
Solubility:	10 to 50 mg/mL at 64° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Kow= 1.51
Vapour pressure:	24.09 psi (55 °C)
Density and/or relative density:	2.28g/mLat 25°C(lit.)
Relative vapour density:	4.89 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

NIOSH considers methyl iodide to be a potential occupational carcinogen.
Decomposes above 270°C . This produces hydrogen iodide. Reacts with strong oxidants. This generates explosion hazard. Reacts with oxygen at 300°C. This generates explosion hazard.

Chemical stability

Colorless liquid that turns yellow, red or brown when exposed to light & moisture.

Possibility of hazardous reactions

Iodomethane is not flammable. The vapour is heavier than air and may accumulate in lowered spaces causing a deficiency of

oxygen. Halogenated aliphatic compounds, such as METHYL IODIDE, are moderately or very reactive. Halogenated organics generally become less reactive as more of their hydrogen atoms are replaced with halogen atoms. Low molecular weight haloalkanes are highly flammable and can react with some metals to form dangerous products. Materials in this group are incompatible with strong oxidizing and reducing agents. Also, they are incompatible with many amines, alkylphosphines, nitrides, azo/diazo compounds, alkali metals (sodium), and epoxides.

Conditions to avoid

no data available

Incompatible materials

Strong oxidizers [Note: Decomposes at 518 degrees F].

Hazardous decomposition products

Iodide & hydrogen iodide may be released when methyl iodide undergoes thermal decomposition (270 deg c).

SECTION 11: Toxicological information

Acute toxicity

Oral: no data available

Inhalation: LCLO Mouse inhalation 78,693 ppm/10 min.

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Cancer Classification: Not Likely to be Carcinogenic to Humans at Doses that Do Not Alter Rat Thyroid Hormone Homeostasis

Reproductive toxicity

No information is available on the reproductive or developmental effects of methyl iodide in humans or animals.

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. The substance may cause effects on the central nervous system. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

Tumours have been detected in experimental animals but may not be relevant to humans.

Aspiration hazard

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

no data available

Bioaccumulative potential

An estimated BCF of 2.9 was calculated for methyl iodide(SRC), using a log Kow of 1.51(1,SRC) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low. While methyl iodide has been detected in various fish and shellfish, it is thought that the chemical may have been formed biogenically(4).

Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc for methyl iodide can be estimated to be 14(SRC). According to a classification scheme(2), this estimated Koc value suggests that methyl iodide should have very high mobility in soil. The soil/water distribution coefficient of methyl iodide in various soils were (soil, Kd): Greenfield sandy loam, 0.09; Linne clay loam, 0.15; Carsetas loamy sand, 0.16; and potting mix, 0.55(3).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN2644 (For reference only, please check.)
IMDG: UN2644 (For reference only, please check.)
IATA: UN2644 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: METHYL IODIDE (For reference only, please check.)
IMDG: METHYL IODIDE (For reference only, please check.)
IATA: METHYL IODIDE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)
IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (For reference only, please check.)

Packing group, if applicable

ADR/RID: I (For reference only, please check.)
IMDG: I (For reference only, please check.)
IATA: I (For reference only, please check.)

Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

The symptoms of acute poisoning do not become manifest until hours or even days after exposure, and they are aggravated by physical effort.