

Material Safety Data Sheet

Dimethyl Carbonate

Section 1 - Product Identification

Synonyms : Methyl Carbonate
Molecular Weight : 90.08 g/mol
Chemical Formula : $C_3H_6O_3$
Company Identification : Tradeasia International Pte. Limited
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Recommended use of the chemical and restrictions on use:

The product is widely used as a chemical solvent in the batteries, paint and coatings industry. It is also used in chemical synthesis as a green solvent.

Section 2 – Composition/Information on Ingredients

Product Name	EC/CAS No
Dimethyl Carbonate	210-478-4/616-38-6

Section 3 – Hazards Identification

3.1 GHS Classification

Flammable liquids (Category 2), H225

For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Label elements

Hazard statement(s)

H225 Highly flammable liquid and vapour.

Precautionary statement(s)

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools

P243 Take precautionary measures against static discharge.

Response

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage

P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal

P501 Dispose of contents/ container to an approved waste disposal plant.

3.3 Other hazards

None

Section 4 – First-Aid Measures

4.1. Description of first aid measures

Skin contact

Move victim to fresh air and remove all contaminated clothing, shoes and leather goods. Gently wipe off excess chemical. Wash off with soap and plenty of water, do not rub the skin. If irritation persists, obtain medical attention.

Eye contact

Use eye wash fountain or fresh water to cleanse eye. If irritation persists for more than 30 minutes, seek medical attention.

Inhalation

If symptoms such as nose or throat irritation are observed, remove to fresh air. If not breathing, give artificial respiration.

Ingestion

Rinse mouth with water. Do not induce vomiting. Drink as much water as possible. If large amounts are swallowed (i.e. more than one teaspoon), contact a doctor or toxicity centre immediately.

4.2. Most important symptoms and effects, both acute and delayed

Most important known symptoms and effects are described in the labelling (section 2.2) and/or in section 11.

4.3. Indication of any immediate medical attention and special treatment needed

N.A.

Section 5 – Fire Fighting Measures

5.1. Suitable Extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2. Specific hazards arising from the chemical

Carbon oxides

5.3. Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary

Section 6 – Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

Section 7 – Handling and Storage

7.1. Precautions for safe Handling

Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge. For precautions see section 2.2.

7.2. Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Section 8 – Exposure Controls/Personal Protection

8.1. Control parameters

Contains no substances with occupational exposure limit values.

8.2. Appropriate engineering controls

General industrial hygiene practice. Wash hands before breaks and at the end of workday.

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

Respirator:

It is usually safe to use the product without a mask or respirator. If the product is used in dusty or confined conditions or spillage and fire conditions a respirator suitable and approved for protection from dusts and mists of pesticides is adequate. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

Clothing:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

Gloves:

Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

Eye protection:

Wear safety goggles or face shield.

Emergency eye wash: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use

Section 9 – Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance : colourless liquid

Odour : N.A.

Odour threshold : N.A.

pH @ 20°C : N.A.

Melting point : 2 – 4°C – lit.

Boiling point : 90°C – lit.

Flash point : 16°C – closed cup

Evaporation rate : N.A.

Flammability : N.A.

Upper/lower flammability or explosive limits : UFL – 12.87% (V), LFL – 4.22% (V)

Vapour pressure : 18 mmHg at 21.1°C

Vapour density : 3.11 (Air = 1.0)

Relative density : 1.069 g/cm³ at 25°C

Solubility in water : 114.7 g/L at 20°C, completely soluble

Partition coefficient, n-octanol/water: log Po/w = 0.354 at 20°C

Surface tension: 31.92 mN/m

Section 10 – Stability and Reactivity

10.1. Reactivity

Stable under normal temperatures and storage conditions.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

N.A.

10.4. Conditions to avoid:

Heat, flames and sparks.

10.5. Incompatible materials

Oxidizing agents, strong acids, strong bases

10.6. Hazardous decomposition products

Hazardous decomposition products formed under fire conditions – carbon oxides.

Section 11 – Toxicological Information

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - > 5.000 mg/kg (Dimethyl carbonate) (OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - > 5,36 mg/l (Dimethyl carbonate) (OECD Test Guideline 403)

Inhalation: No data available (Dimethyl carbonate)

LD50 Dermal - Rabbit - male and female - > 2.000 mg/kg (Dimethyl carbonate)

Dermal: No data available (Dimethyl carbonate)

Skin corrosion/irritation

Skin – Rabbit (Dimethyl carbonate), Result: No skin irritation (OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes – Rabbit (Dimethyl carbonate), Result: No eye irritation,

Respiratory or skin sensitisation

Freund's complete adjuvant test - Guinea pig (Dimethyl carbonate), Result: negative (OECD Test Guideline 406)

Germ cell mutagenicity

Chromosome aberration test in vitro (Dimethyl carbonate), lymphocyte, Result: negative

Carcinogenicity

No data available (Dimethyl carbonate)

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No toxicity to reproduction (Dimethyl carbonate)

Specific target organ toxicity - single exposure

No data available (Dimethyl carbonate)

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available (Dimethyl carbonate)

Additional Information

RTECS: FG0450000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated (Dimethyl carbonate).

Section 12 – Ecological Information

12.1.Toxicity

Toxicity to fish: flow-through test LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h (Dimethyl carbonate) (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates: static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (Dimethyl carbonate) (OECD Test Guideline 202)

Toxicity to algae static test EC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h (Dimethyl carbonate) (OECD Test Guideline 201)

12.2. Persistence and degradability

This product is regarded as very biodegradable.

12.3. Bioaccumulative potential

N.A

12.4. Mobility in soil

N.A

12.5. Other adverse effects

N.A

Section 13 – Disposal Considerations

13.1. Disposal methods

Product:

Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging:

Dispose of as unused product

Section 14 – Transport Information

14.1. UN number : ADR/RID: 1161 IMDG: 1161 IATA-DGR: 1161

14.2. UN proper shipping name: ADR/RID, IMDG, IATA-DGR - Dimethyl carbonate

14.3. Transport of hazard classes : ADR/RID: 3 IMDG: 3 IATA-DGR: 3

14.4. Packing group : ADR/RID: II IMDG: II IATA-DGR: II

14.5. Environmental hazards : ADR/RID: no IMDG Marine pollutant: no IATA-DGR: no

14.6. Special precautions for user : N.A

14.7. Incompatible materials: N.A.

Section 15 – Regulatory Information

15.1. Safety, health and environmental regulations for the substance/mixture:

N.A.

Section 16 : Additional Information

16.1. Full text of H-Statements referred to under sections 3:

H225 Highly flammable liquid and vapor.

16.2. Disclaimer of Liability

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