

Safety Data Sheet

1. Chemical product and company identification

Product name : Dimethyl carbonate

Company information

Name of manufacturer : KANTO CHEMICAL CO., INC.
 Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
 Name of section : Business Administration Department, Reagent Division
 Telephone number : +81-3-6214-1090
 Facsimile number : +81-3-3241-1047
 Mail address : BC32@kanto.co.jp
 Reference No : 10340
 Recommended use : For research use only
 Restrictions on use : Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Physical hazards	Flammable liquids	Category 2
Health hazards	Reproductive toxicity	Category 2

Hazard
pictograms



Signal word : Danger

Hazard statements : Highly flammable liquid and vapor
Suspected of damaging fertility or the unborn child

Precautionary statements

Prevention : Do not handle until all safety precautions have been read and understood.
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Keep container tightly closed.
 Ground and bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting equipment.
 Use only non-sparking tools.
 Take action to prevent static discharges.
 Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .
 IF exposed or concerned: Get medical advice/attention.

Storage : Store in a well-ventilated place. Keep cool.
 Store locked up.

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national



and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Dimethyl carbonate	≥ 98	C3H6O3	Listed	210-478-4	616-38-6

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.

First-aid measures after skin contact : Wash the affected areas under running water.

First-aid measures after eye contact : Wash the affected areas under running water for at least 15 minutes. If necessary, get medical treatment.

First-aid measures after ingestion : The chemical is volatile. Do not induce vomiting because it increases the risk of aspiration into the lungs. Get medical attention immediately. If necessary, rinse mouth with water.

Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Suitable extinguishing media : Dry chemical powder, carbon dioxide, dry sand, foam

Unsuitable extinguishing media : Water spray

Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Fight fire from windward.

Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Foam extinguisher is effective for a large scale fire.

Personal protection (Emergency response) : Firefighters should wear protective equipment.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Remove all sources of ignition. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Environmental precautions

Environmental precautions : Attention should be given to avoid damage to the environment by flowing of spillage to rivers.



Methods and Equipment for Containment and Cleaning up

- For containment : Absorb spill with inert material (e.g, diatomaceous earth, sand) and flush spillage area with copious amounts of water.
- Prevention Measures for Secondary Accidents : Remove nearby sources of ignition and prepare extinguishing media.

7. Handling and storage**Handling**

- Technical measures : Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Fire is strictly prohibited.
Ventilate well at working places.
- Precautions for safe handling : Avoid formation of vapor and aerosols.
Do not allow contact with oxidizing substances.

Storage

- Storage conditions : Store in a dark, cool place and tightly closed.
- Material used in packaging/containers : Glass, fluorine resin, stainless steel.
Do not use vinyl chloride resin, acrylic resin, polyethylene etc.

8. Exposure controls / Personal protection equipment

ACGIH TWA	Not established
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- Appropriate engineering controls : Use with an enclosed system or a local exhaust ventilation.

Protective equipment

- Respiratory protection : Chemical cartridge respirator with an organic vapor cartage or airline respirator
- Hand protection : Impervious protective gloves
- Eye protection : Safety goggles
- Skin and body protection : Protective clothing, protective boots

9. Physical and chemical properties

- Physical state : Liquid
- Color : Colorless.
- Odor : Aromatic
- pH : No data available
- Melting point : 3 ° C
- Freezing point : No data available
- Boiling point : 90 ° C
- Flash point : 14 ° C (C.C.)
- Auto-ignition temperature : 458 ° C
- Decomposition temperature : No data available
- Flammability : Flammable
- Vapor pressure : 7.4 kPa (25°C)
- Relative density : No data available
- Density : 1.068 - 1.073 g/cm³ (20°C)



Relative gas density	: 3.1
Solubility	: Water: 114.7 g/L (20°C) Organic solvent: Soluble in ethanol, ether.
Partition coefficient n-octanol/water (log Pow)	: 0.354 (20°C)
Explosive limits (vol %)	: 4.2 - 12.9 vol %
Viscosity, kinematic	: 0.62 mm ² /s (20°C)
Particle characteristics	: No data available

10. Stability and reactivity

Reactivity	: May react with oxidizing substances.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Stable under normal conditions of use.
Conditions to avoid	: Light, heat.
Incompatible materials	: Oxidizing substances.
Hazardous decomposition products	: Carbon monoxide.

11. Toxicological information

Acute toxicity (oral)	: No classification rat LD50=6400-12800 mg/kg
Acute toxicity (dermal)	: No classification rat LD50>2500 mg/kg
Acute toxicity (inhalation)	: No classification (gas) Classification not possible (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	: No classification Although details of such matters as the testing method are not indicated, based on the results that in a test using rabbits and rats, the substance was not irritating, the substance was classified into "No classification".
Serious eye damage/irritation	: Classification not possible It is described that in a test using rabbits, the substance was slightly irritating. However, since the test does not provide the testing method, details of the results, or details of the literature, the substance was classified into "Classification not possible".
Respiratory sensitization	: Classification not possible
Skin sensitization	: Classification not possible
Germ cell mutagenicity	: Classification not possible
Carcinogenicity	: Classification not possible



Reproductive toxicity	: Suspected of damaging fertility or the unborn child In a developmental toxicity test in mice exposed by inhalation to 300 – 3000 ppm during the organogenesis period, maternal body weight gain and food consumption were reduced at 3000 ppm, and postimplantation loss due to increased resorptions, and increased number of stunted fetuses were observed. At the 3000 ppm dose, total incidences of fetal malformations were significantly increased and included cleft palate, microtia, and multiple skull bone malformations. Since the effects on reproduction and fetal development, especially the increased incidences of fetal malformations, were observed at a dose level in which general toxicity such as decreased body weight gain in the parental animals was manifested, the substance was classified into category 2.
STOT-single exposure	: Classification not possible There is a report that the substance has an oral LD50 value in rats and mice between 6.4 and 12.8 g/kg. Since exposure symptoms included weakness, ataxia with gasping, and unconsciousness, effects on the nervous system were suspected. The effects were observed at dose levels which exceeded the guidance value range. Exposure to the substance by inhalation of a concentration of 8000 ppm for 2-hour (4-hour equivalence: 20.8 mg/L) caused gasping, loss of coordination, and pulmonary edema with death occurring in a period of 2-hour. Classification was not possible since the reported effects appeared at dose levels exceeding the guidance value range.
STOT-repeated exposure	: Classification not possible
Aspiration hazard	: Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	: Classification not possible
Aquatic chronic	: Classification not possible

Persistence and degradability

No additional information available

Bioaccumulative potential

Low bioconcentration
log Pow : 0.354

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone	: No data available
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13. Disposal considerations

Ecological waste information	: Burn in a chemical incinerator equipped with an afterburner and a scrubber. Or entrust approved waste disposal companies with the disposal.
Contaminated container and packaging	: In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.



14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG) : 1161
Proper Shipping Name (IMDG) : DIMETHYL CARBONATE
Packing group (IMDG) : II
Transport hazard class(es) : 3

(IMDG)

Air transport(IATA)

UN-No. (IATA) : 1161
Proper Shipping Name (IATA) : Dimethyl carbonate
Packing group (IATA) : II
Transport hazard class(es) : 3

(IATA)

Marine pollutant : Not applicable

MFAG-No : 129

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : NITE Chemical Risk Information Platform (NITE-CHRIP), National
Institute of Technology and Evaluation.
ICSC Card (2009) .
ECHA (European Chemicals Agency).

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet(SDS) is prepared based on JIS Z7253.

