### 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

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and/or international regulation.

# 3. Composition/information on ingredients

Distinction of substance or Substance

mixture

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Dimethyl carbonate	≥ 98	СЗН603	Listed	210-478-4	616-38-6

## 4. First aid measures

# First aid measures

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

inhalation 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

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

Personal protection (Emergency

: Firefighters should wear protective equipment.

response)

# 6. Accidental release measures

#### Personal Precautions, Protective Equipment and Emergency Procedures

General measures

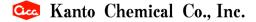
Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Remove all sources of ignition. Keep away personnel except for authorized ones from spillage area by

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 : Glass, fluorine resin, stainless steel.

packaging/containers

Do not use vinyl chloride resin, acrylic resin, polyethylene etc.

# 8. Exposure controls / Personal protection equipment

ACGIH TWA Not established

Appropriate engineering : Use with an enclosed system or a local exhaust ventilation.

controls

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

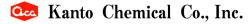
Melting point :  $3 \, ^{\circ}$  C

Freezing point : No data available

Boiling point : 90  $^{\circ}$  C Flash point : 14  $^{\circ}$  C (C.C.) Auto-ignition temperature : 458  $^{\circ}$  C

Flammability : Flammable 
Vapor pressure :  $7.4 \text{ kPa } (25^{\circ}\text{C})$  
Relative density : No data available

Density :  $1.068 - 1.073 \text{ g/cm}^3 (20^{\circ}\text{C})$ 



Relative gas density : 3.1

Solubility : Water: 114.7 g/L (20°C)

Organic solvent: Soluble in ethanol, ether.

Partition coefficient n-: 0.354 (20°C)

octanol/water (log Pow)

Explosive limits (vol %) : 4.2 - 12.9 vol % :  $0.62 \text{ mm}^2/\text{s} (20^{\circ}\text{C})$ Viscosity, kinematic 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 : Carbon monoxide.

products

# 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

### 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.

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# 14. Transport information

# International Regulations

### Transport by sea (IMDG)

UN-No. (IMDG) 1161

Proper Shipping Name (IMDG) DIMETHYL CARBONATE

Packing group (IMDG) IITransport hazard class(es) 3

(IMDG)

#### Air transport(IATA)

UN-No. (IATA) 1161

Proper Shipping Name (IATA) Dimethyl carbonate

Packing group (IATA) TT : 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.