### Safety Data Sheet

# 1. Chemical product and company identification

Product name : Diisopropyl ether

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 : +81-3-6214-1090Facsimile number : +81-3-3241-1047Mail address : BC32@kanto.co.jp

Reference No : 32463

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 Specific target organ toxicity Category 3 (narcosis)

(single exposure)

Specific target organ toxicity Category 3 (respiratory tract irritation.)

(single exposure)

Environmental Aquatic acute Category 3

hazards

Aquatic chronic Category 3

Hazard pictograms





Signal word : Danger

Hazard statements : Highly flammable liquid and vapor

May cause respiratory irritation May cause drowsiness or dizziness

Harmful to aquatic life

Harmful to aquatic life with long lasting effects

Precautionary statements

Prevention : 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.

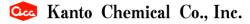
Use only non-sparking tools.

Take action to prevent static discharges.

Avoid breathing mist/vapors.

Use only outdoors or in a well-ventilated area.

Avoid release to the environment.



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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 INHALED: Remove person to fresh air and keep comfortable for

breathing.

Call a POISON CENTER or doctor if you feel unwell.

Storage : Store in a well-ventilated place. Keep container tightly closed.

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

Synonyms : Di-iso-propyl ether, Isopropyl ether, iso-Propyl ether

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Diisopropyl ether	≥ 99	C6H14O	Listed	203-560-6	108-20-3

<sup>\*</sup>Stabilized with hydroquinone.

### 4. First aid measures

# First aid measures

First-aid measures after

inhalation

: Remove the victim to fresh air, and make  $\mathop{\hbox{\rm him}}\nolimits$  blow his nose and

gargle.

First-aid measures after skin

contact

: Wash the affected areas under running water.

First-aid measures after eve

contact

: Wash the affected areas under running water.

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, CO2, dry sand, or alcohol-resistant foam

Unsuitable extinguishing media

: Water spray, Foam extinguisher

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

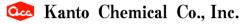
protect surrounding area.

Fight fire from windward.

Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Alcohol-resistant foam extinguisher is effective

for a large scale fire.

Personal protection (Emergency : Wear breathing apparatus.



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 discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

#### 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.

Remove nearby sources of ignition and prepare extinguishing media.

# 7. Handling and storage

#### **Handling**

Technical measures

: Wear proper protective equipment to avoid contact with  $\operatorname{skin}$  or

inhalation of vapor. Fire is strictly prohibited.

Precautions for safe handling

Prevent build-up of electrostatic charges (e.g. by grounding).

Use with an enclosed system or a local exhaust ventilation. Use

in well-ventilated areas.

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, polystyrene etc.

# 8. Exposure controls / Personal protection equipment

ACGIH TWA	250 ppm
ACGIH STEL	310 ppm

Appropriate engineering

controls

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

Protective equipment

Respiratory protection

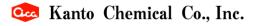
: Chemical cartridge respirator with an organic vapor cartage or

airline respirator

Hand protection : Organic solvents resistant gloves

Eye protection : Safety goggles

Skin and body protection : Protective clothing, protective boots



# 9. Physical and chemical properties

Physical state : Liquid Color Colorless.

0dor Characteristic ether odor

No data available На

-85.89 ° C Melting point

Freezing point : No data available

: 68.47 ° C Boiling point -27.8 ° C (C.C.) Flash point

Auto-ignition temperature 443  $^{\circ}$  C

Decomposition temperature : No data available

Flammability : Flammable : 160 hPa (20℃) Vapor pressure Relative density : No data available

:  $0.720 - 0.734 \text{ g/cm}^3 (20^{\circ}\text{C})$ Density

: 3.5 Relative gas density

Solubility : Organic solvents: Miscible with many kinds of organic solvents like

Water: 0.9 %

Partition coefficient n-: 1.64

octanol/water (log Pow)

Explosive limits (vol %) : 1.4 - 21.0 vol % :  $0.45 \text{ mm}^2/\text{s} (20^{\circ}\text{C})$ Viscosity, kinematic Particle characteristics : No data available

## 10. Stability and reactivity

Reactivity : May react with oxidizing substances.

Chemical stability : May form explosive peroxides by oxygen or light.

Possibility of hazardous : If the concentration of peroxide is high, it may explode due to

reactions

impact.

Conditions to avoid : Light, heat.

Incompatible materials : Oxidizing substances. Hazardous decomposition : Carbon monoxide.

products

# 11. Toxicological information

Acute toxicity (dermal)

Acute toxicity (oral) No classification

> rat LD50=4600mg/kg No classification

: No classification (gas)

rabbit LD50=14516mg/kg Acute toxicity (inhalation)

> Classification not possible (vapor) Classification not possible (dust, mist)

Skin corrosion/irritation : No classification

> In a 4-hour semi-occlusive application test of the substance (0.5mL) in rabbits (OECD TG 404), average scores of erythema and edema

after 24/48/72 hours were 1.77 and 0.87, respectively.

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Serious eye damage/irritation : No cl

: No classification

In rabbit eye irritation tests (OECD TG 405), average scores of corneal opacity, iris, conjunctival redness, and chemosis after 24/48/72 hours were all 0 in 2 cases and only 0.33 in 1 case for

conjunctival redness.

Respiratory sensitization

: Classification not possible

Skin sensitization

Carcinogenicity

Reproductive toxicity

STOT-single exposure

: No classification

In a mouse local lymph node assay (LLNA) (OECD TG 429), SI values for 25%, 50%, and 100% were 0.75, 0.71, and 0.80, respectively,

and were judged to be negative.

Germ cell mutagenicity

Classification not possible

As for in vitro tests, negative results were obtained for reverse mutation tests with bacteria and chromosome aberration tests with  $\frac{1}{2}$ 

cultured mammalian cells.Classification not possibleClassification not possibleMay cause drowsiness or dizziness

May cause respiratory irritation

Human studies have shown that most subjects exposed to the vapor of the substance at 800 ppm for 5 minutes exhibited nasal irritation. Animal studies have shown that monkeys, rabbits, and guinea pigs exposed by inhalation to the vapor of the substance at 30,000 ppm for 1 hour showed narcosis, but all survived. Thus, it was classified into category 3 (narcosis, respiratory tract

irritation).

STOT-repeated exposure

: Classification not possible

In a combined repeated dose and reproductive/developmental toxicity test in rats exposed to 100-1000 mg/kg/day of the substance by oral gavage, eosinophilic bodies in the proximal tubular epithelium was observed in males at 100 mg/kg/day and above, and increased liver and kidney weights, increase in total cholesterol, phospholipid, and total protein, centrilobular hepatocellular hypertrophy, and necrosis of the proximal tubules were observed at 300 or 1000 mg/kg/day. In a test in which rats were exposed by inhalation to 480-7100 ppm of the substance for 90 days, no effect was seen at 480 ppm, increased liver and kidney weights were seen in males at 3300 ppm and above, hepatocyte hypertrophy of the liver and increased hyaline droplets in the proximal tubules of the kidney were seen in males at 7100 ppm. No effects were seen within the guidance value range of category. However, the classification was not possible because of insufficient data (no data on dermal route).

Aspiration hazard

Classification not possible

# 12. Ecological information

### **Ecotoxicity**

Aquatic acute : Harmful to aquatic life

Pimephales promelas LC50=91.7mg/L/96h

Aquatic chronic : Harmful to aquatic life with long lasting effects

#### Persistence and degradability

Not readily biodegradable

BOD : 0%

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### Bioaccumulative potential

Low bioconcentration log Pow : 1.64

### Mobility in soil

High mobility Koc : 160

#### Hazardous to the ozone layer

Ozone : Classification not possible

# 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) : 1159

Proper Shipping Name (IMDG) : DIISOPROPYL ETHER

Packing group (IMDG) : II Transport hazard class(es) : 3

(IMDG)

Air transport(IATA)

UN-No. (IATA) : 1159

Proper Shipping Name (IATA) : Diisopropyl ether

Packing group (IATA) : II Transport hazard class(es) : 3

(IATA)

Marine pollutant : Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollutant category : Y MFAG-No : 127

## 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 : Solvents Handbook, T, Asahara el, Kodansha Scientific Ltd.

(1976) .

Dangerous Properties of Industrial Materials, 6th ed.

N. I. Sax Van Nostrand Reinhold Company (1984) .

Handbook of Dangerous Substances Springer-Verlag Tokyo

(1991).

NITE Chemical Risk Information Platform (NITE-CHRIP), National

Institute of Technology and Evaluation.

<< 32463 Diisopropyl ether >>

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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.