# SAFETY DATA SHEETS

According to the UN GHS revision 10

## 1: Identification

### 1.1 GHS Product identifier

| | |
|---|---|
| **Product name** | Diisopropyl ether |

### 1.2 Other means of identification

| | |
|---|---|
| **Product number** | 108-20-3 |
| **Other names** | Diisopropyl ether |

### 1.3 Recommended use of the chemical and restrictions on use

| | |
|---|---|
| **Identified uses** | Industrial and scientific research use. |
| **Uses advised against** | no data available |

### 1.4 Supplier's details

| | |
|---|---|
| **Company** | Zhongshan Greenrock Technology Co., Ltd. |
| **Address** | No. 138, Jinsan Avenue, Sanjiao Town, Zhongshan City, Guangdong Province, China |
| **Telephone** | +86-2087066781 |

### 1.5 Emergency phone number

| | |
|---|---|
| **Emergency phone number** | +86-2087066781 |
| **Service hours** | Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours). |

## 2: Hazard identification

### 2.1 Emergency Overview

Flammable material. Contact with ignition sources may cause fire. Liquids and solids burn slowly, and aerosols may produce flammable spray. Keep away from heat and ignition sources.

### 2.2 GHS Classification

Flammable liquids : Category 2
Specific target organ toxicity, single exposure; Narcotic effects : Category 3
Hazardous to the aquatic environment, long-term hazard : Category 3

### 2.3 GHS label elements, including precautionary statements

| | |
|---|---|
| **Pictogram(s)** | |
| **Signal word** | Danger |
| **Hazard statement(s)** | H225 Highly Flammable liquid and vapor<br>H336 May cause drowsiness or dizziness<br>H412 Harmful to aquatic life with long lasting effects |
| **Precautionary statement(s)** | |
| **Prevention** | P210 Keep away from heat, hot surface, sparks, open flames and other ignition sources. No smoking.<br>P233 Keep container tightly closed.<br>P240 Ground/bond container and receiving equipment.<br>P241 Use explosion-proof [electrical/ventilating/lighting/.../] equipment.<br>P242 Use only non-sparking tools.<br>P243 Take precautionary measures against static discharge.<br>P261 Avoid breathing dust/fume/gas/mist/vapors/spray.<br>P271 Use only outdoors or in a well-ventilated area.<br>P273 Avoid release to the environment.<br>P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/... |
| **Response** | P319 Get medical help if you feel unwell.<br>P303+P361+P353 IF ON SKIN (or hair),Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].<br>P304+P340 IF INHALED,Remove person to fresh air and keep comfortable for breathing.<br>P370+P378 In case of fire,Use ... to extinguish. |
| **Storage** | P405 Store locked up.<br>P403+P233 Store in a well-ventilated place. Keep container tightly closed.<br>P403+P235 Store in a well-ventilated place. Keep cool. |
| **Disposal** | P501 Dispose of contents/container to ... |

## 2.4 Physical and chemical

Flammable liquid with a flash point between 23-60°C. It burns easily when exposed to heat or open flame. Flammable solid: May ignite when exposed to heat, friction, or impact. Aerosol: The spray contains flammable ingredients and may form a flammable mixture.

## 2.5 Health hazards

The primary hazard is burns from fire. Some substances produce toxic fumes that can cause inhalation injuries. Liquids can be irritating and cause inflammation in contact with skin and eyes.

## 2.6 Environmental hazards

Smoke from fires may have a short-term impact on the surrounding environment. Leaked liquids may contaminate soil and water, causing some damage to local ecosystems. Most substances are naturally degradable in the environment.

## 2.7 Other hazards which do not result in classification

no data available

# 3: Composition/information on ingredients

## 3.1 Substances

| Chemical name | Common names and synonyms | CAS number | EC number | Concentration |
|---|---|---|---|---|
| Diisopropyl ether | Diisopropyl ether | 108-20-3 | 203-560-6 | 99% |

# 4: First-aid measures

## 4.1 General advice

Immediately stay away from fire source and use dry powder or foam fire extinguisher to extinguish fire (if burning); remove contaminated clothing and rinse the contact area with clean water; bring the material SDS document and seek medical attention if necessary

## 4.2 If inhaled

Move to a ventilated area. If aerosols or solid dust are inhaled, cough to expel foreign matter from the respiratory tract. If mild chest tightness occurs, rest and observe. If symptoms persist, seek medical attention.

## 4.3 In case of skin contact

Rinse with running water for 10-15 minutes. If the skin is slightly irritated, apply moisturizer (such as Vaseline); avoid scratching to prevent skin damage and infection.

## 4.4 In case of eye contact

Rinse with clean water for 10 minutes and then instill artificial tears; if stinging or photophobia persists, consult an ophthalmologist

## 4.5 If swallowed

If a small amount is accidentally ingested, drink plenty of water to promote excretion; if nausea or abdominal pain occurs, seek medical attention immediately and do not induce vomiting on your own.

## 4.6 Most important symptoms and effects, both acute and delayed

Acute symptoms include mild skin irritation (redness, itching), eye stinging, and mild cough; no significant long-term health effects (unless exposed to large amounts over a long period of time).

## 4.7 Protection of first-aiders

Rescuers must wear anti-static gloves and goggles; wear dust masks when handling dust; avoid contact with combustion products

## 4.8 Notes to physician

Inform the doctor of the substance type and exposure amount; treat symptoms (eg, antihistamine ointment for skin irritation, anti-inflammatory eye drops for eye irritation).

## 5: Fire-fighting measures

### 5.1 Unsuitable extinguishing media

Flammable gas: Do not use water (cannot cover the gas) or carbon dioxide (may cause flashback); Extremely flammable liquids (flash point 23°C): Avoid using high-pressure water (can easily spread the liquid and expand the fire).

### 5.2 Specific hazards during fire fighting

Flammable gases can easily reach their explosion limits when mixed with air (such as 4%-75% hydrogen), and will explode when exposed to fire, with strong shock waves; extremely flammable liquids are highly volatile, and their vapors can easily form explosive mixtures with a fast burning speed (such as ether).

### 5.3 Hazardous combustion products

Carbon monoxide and incomplete combustion products of hydrocarbons (such as aldehydes and ketones).

### 5.4 Specific extinguishing methods

Flammable gas: first shut off the leak source (when safe). If it cannot be shut off, use dry powder to extinguish the fire (to suppress combustion) and dilute the vapor with mist water (to prevent explosion). Extremely flammable liquid: use dry powder/foam (anti-solvent foam, such as ethanol) for small areas and cover large areas with foam (to isolate oxygen). Open flames are strictly prohibited from approaching.

### 5.5 Special protective equipment for fire-fighters

Wear anti-static work clothes, positive pressure air respirator, and chemical-resistant gloves; carry a combustible gas detector (to measure explosion limits); use explosion-proof tools during operation to avoid static sparks.

## 6: Accidental release measures

### 6.1 Protective measures for workers

Wear anti-static work clothes, anti-static gloves, and chemical goggles; wear a gas mask (organic vapor filter cartridge) for gases/volatile liquids; wear impact protection for aerosols.

### 6.2 Environmental protection measure

Liquids/aerosols are prevented from flowing into sewers/rivers, and oil booms + oil absorbent cotton are used to pollute water bodies; gas leaks are monitored for concentration to prevent them from spreading to residential areas; solids are prevented from dust polluting the soil.

### 6.3 Containment methods for leaked chemicals

Gas: Shut off the leak source (when safe), and use explosion-proof fan to lead the leak to an open area; Liquid: Collect in anti-static container; Solid: Put non-sparking tools into anti-static container; Aerosol: Collect the leaked tank (no squeezing).

### 6.4 Cleanup methods for chemical spills

Liquid: absorb with a small amount of oil-absorbing cotton and transfer with a large amount of explosion-proof pump; Solid: transfer with spark-free tools (to prevent friction); Aerosol: leaking tanks are collected separately and disposed of professionally.

### 6.5 Measures to prevent the spread of leaks

Designate a 10-meter isolation zone and prohibit open flames/static equipment; set up fire barriers for liquids and anti-static isolation belts for gases; use explosion-proof ventilation to reduce concentration (explosion limit).

### 6.6 Container leakage treatment

Gas: Minor leaks should be sealed with anti-static sealant, serious leaks should be transferred after pressure relief; Liquid: Anti-static sealant should be used to seal, serious leaks should be transferred with explosion-proof pump; Aerosol: Do not squeeze, wrap in sealed bag.

### 6.7 Special considerations

Eliminate static electricity before operation; provide good ventilation to prevent gas accumulation; perform anti-static testing on tools; clean protective equipment and perform anti-static testing after leak treatment.

## 7: Handling and storage

### 7.1 Safe storage conditions

Store in a normally ventilated warehouse (air changes ? 4 times/hour) with a cement or asphalt floor (anti-slip); the container should be plastic or thin steel plate (thickness ? 1mm) with a sealed lid; the aerosol should be stored in a cool place to avoid pressure (stacking height ? 1.2 meters); the warehouse should be equipped with a dry powder fire extinguisher (capacity ? 2kg).

### 7.2 Storage precautions

Store away from oxidants (isolation distance ? 1 meter) and avoid direct sunlight; prevent flammable solids from absorbing moisture (such as sulfur, which must be sealed), and keep aerosols away from heat sources (such as radiators); check container labels monthly to ensure they are clear; handle with care during transportation to avoid impact.

### 7.3 VCI Storage Grade

Level 3 (Medium): The inner wall of the metal container is coated with VCI anti-rust oil (dosage ? 2g/m²) and inspected once every three months; the humidity in the warehouse is controlled at 40%-60% to prevent slight corrosion of the metal container.

### 7.4 Recommended storage temperature

10-35?, flammable liquids with a flash point ?23? can be relaxed to 5-40?; aerosols must be ?30? to prevent the tank from expanding due to heat; flammable solids should not be kept below 0? to prevent agglomeration and affect use (if the label has a recommended storage temperature, the label shall prevail).

### 7.5 Handling

For precautions see Safety Data Sheet section 2
Advice on safe handling : Work under hood. Do not inhale substance/mixture.

## 8: Exposure controls/personal protection

### 8.1 Respiratory protection

When exposed to flammable liquids with medium flash points (such as kerosene) or dusts (such as sulfur), wear a half-mask filtering respirator (APF?5); upgrade to a powered air respirator when ventilation is poor.

### 8.2 Recommended Filter type

For flammable liquid vapors, choose Type A1 filter cartridge; for dust, choose Type P100 filter cotton; for aerosols, choose Type A+P2 composite filter cartridge.

### 8.3 Eye/face protection

Wear ordinary impact-resistant goggles. If you are handling splashing liquids, wear protective glasses with scratch-resistant lenses to ensure a clear field of vision.

### 8.4 Skin and body protection

Wear ordinary anti-static clothing made of cotton blended conductive fiber; wear a dust-proof apron when handling solids to avoid dust adhesion.

### 8.5 Hand protection

Wear nitrile chemical-resistant gloves with a thickness of ?0.3mm and a certain degree of wear resistance. Check for damage after use.

### 8.6 Hygiene measures

Wash your hands with clean water after work. If you are exposed to dust, you need to clean your nasal cavity (with saline solution); clothes need to be patted to remove dust before washing to avoid the spread of dust; eating and drinking are prohibited in the work area.

## 9: Physical and chemical properties and safety characteristics

| | |
|---|---|
| **Physical state** | colourless liquid |
| **Colour** | Colorless volatile liquid |
| **Odour** | Sweet, slightly sharp, pungent like camphor and ethyl ether |
| **Melting point/freezing point** | -85.5oC |
| **Boiling point or initial boiling point and boiling range** | 68-69°C(lit.) |
| **Flammability** | Class IB Flammable Liquid: Fl.P. below 22.78°C and BP at or above 37.78°C.Highly flammable. |

| | |
|---|---|
| **Lower and upper explosion limit/flammability limit** | LOWER 1.4%, UPPER 7.9% |
| **Flash point** | -29°C |
| **Auto-ignition temperature** | 441.67°C |
| **Decomposition temperature** | When heated to decomposition it emits acrid smoke and fumes. |
| **pH** | no data available |
| **Kinematic viscosity** | 0.273 centipoise at 20 deg F |
| **Solubility** | In water:9 g/L (20 oC) |
| **Partition coefficient n-octanol/water** | log Kow= 1.52 |
| **Vapour pressure** | 120 mm Hg ( 20 °C) |
| **Density and/or relative density** | 0.725g/mLat 25°C(lit.) |
| **Relative vapour density** | 3.5 (vs air) |
| **Particle characteristics** | no data available |

# 10: Stability and reactivity

## 10.1 Reactivity

no data available

## 10.2 Chemical stability

Keeping ethers from becoming anhydrous plus the addition of antioxidants will help reduce this explosion hazard.

## 10.3 Possibility of hazardous reactions

FLAMMABLE LIQUID.The vapour is heavier than air and may travel along the ground; distant ignition possible. As a result of flow, agitation, etc., electrostatic charges can be generated.Ethers, such as DIISOPROPYL ETHER, can act as bases. They form salts with strong acids and addition complexes with Lewis acids. The complex between diethyl ether and boron trifluoride is an example. Ethers may react violently with strong oxidizing agents. In other reactions, which typically involve the breaking of the carbon-oxygen bond, ethers are relatively inert. Mixing diisopropyl ether in equal molar portions with any of the following substances in a closed container caused the temperature and pressure to increase: chlorosulfonic acid, nitric acid, [NFPA 1991].

## 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

Mixing diisopropyl ether and chlorosulfonic acid in a closed container caused the temp and pressure to incr. Mixing diisopropyl ether and 70% nitric acid in a closed container caused the temp and pressure to increase.

### 10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and fumes.

## 11: Toxicological information

### 11.1 Acute toxicity

Oral: no data available
Inhalation: no data available
Dermal: no data available

### 11.2 Skin corrosion/irritation

no data available

### 11.3 Serious eye damage/irritation

no data available

### 11.4 Respiratory or skin sensitization

no data available

### 11.5 Germ cell mutagenicity

no data available

### 11.6 Carcinogenicity

no data available

### 11.7 Reproductive toxicity

no data available

### 11.8 STOT-single exposure

no data available

### 11.9 STOT-repeated exposure

no data available

### 11.10 Aspiration hazard

no data available

# 12: Ecological information

## 12.1 Toxicity

Toxicity to fish: LC50 Pimephales promelas (fathead minnow) 91.7 mg/l 96 hr flow-through bioassay, wt 0.12 g, water hardness 45.5 mg/l CaCO3, temp: 25 + or - 1°C, pH 7.5, dissolved oxygen greater than 60% of saturation
Toxicity to daphnia and other aquatic invertebrates: no data available
Toxicity to algae: no data available
Toxicity to microorganisms: no data available

## 12.2 Persistence and degradability

No data concerning the biodegradation of isopropyl ether in environmental media were located. An activated sludge aqueous screening study found that the compound was biodegraded slowly after a 15 day lag period with a 25% theoretical biological oxygen demand being measured after 25 days incubation(1). A screening test study utilizing a sewage inoculum also indicated slow biodegradation as indicated by the 7% theoretical biological oxygen demand which was measured after 5 days(2). These screening test results suggest that isopropyl ether may be resistent to biodegradation in the environment(SRC). Many ethers are known to be resistant to biodegradation(3).

## 12.3 Bioaccumulative potential

An estimated BCF of 8 was calculated for isopropyl ether(SRC), using a log Kow of 1.52(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

## 12.4 Mobility in soil

The Koc of isopropyl ether is estimated as approximately 160(SRC), using a log Kow of 1.52(1) and a regression-derived equation(2,SRC). According to a classification scheme(3), this estimated Koc value suggests that isopropyl ether is expected to have high mobility in soil(SRC).

## 12.5 Other adverse effects

no data available

# 13: Disposal considerations

## 13.1 Disposal methods for waste chemicals

Flammable liquids can be recovered by distillation or burned in specialized incinerators. Flammable solids can be crushed and then mixed with other fuels for combustion (combustion temperature must be controlled). Aerosols must be emptied of their contents and the containers sorted by metal or plastic for recycling. Residues must be disposed of as flammable waste.

## 13.2 Precautions

The disposal process must be kept away from fire and heat sources; liquid volatiles must be effectively collected and treated; solid disposal must prevent dust; aerosol tanks must be confirmed to be completely empty before disposal; operators must avoid generating static electricity and wear appropriate protective

equipment.

## 14: Transport information

### 14.1 UN Number

ADR/RID: UN1159 IMDG: UN1159 IATA: UN1159

### 14.2 UN Proper Shipping Name

ADR/RID: DIISOPROPYL ETHER IMDG: DIISOPROPYL ETHER IATA: DIISOPROPYL ETHER

### 14.3 Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

### 14.4 Packing group, if applicable

ADR/RID: II IMDG: II IATA: II

### 14.5 Environmental hazards

ADR/RID: no IMDG: no IATA: no

### 14.6 Special precautions for user

no data available

### 14.7 Transport in bulk according to IMO instruments

no data available

## 15: Regulatory information

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

| Chemical name | Common names and synonyms | CAS number | EC number |
|---|---|---|---|
| Diisopropyl ether | Diisopropyl ether | 108-20-3 | 203-560-6 |
| **New Zealand Inventory of Chemicals (NZIoC)** | | | Listed. |
| **Philippines Inventory of Chemicals and Chemical Substances (PICCS)** | | | Listed. |
| **Vietnam National Chemical Inventory** | | | Not Listed. |
| **Australian Inventory of Industrial Chemicals (AIIC)** | | | Not Listed. |
| **Catalogue of Strictly Restricted Toxic Chemicals in China** | | | Not Listed. |
| **China Catalog of Hazardous chemicals 2015** | | | Listed. |
| **European INventory of Existing Commercial chemical Substances** | | | Not Listed. |
| **IARC Monographs on the Evaluation of Carcinogenic Risks to Humans** | | | Listed. |
| **TSCA Inventory of Chemical Substances** | | | Listed. |

## 16: Other information

**Information on revision**

| | |
|---|---|
| **SDS Creation Date** | July 1, 2025 |
| **SDS Revision Date** | July 1, 2025 |

**Abbreviations and acronyms in SDS**

- 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%

**SDS 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/

**Any questions regarding this Safety Data Sheet, Please send your inquiry to sales@MolBest.com**

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