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Hefei TNJ Chemical Industry Co.,Ltd.

B911 Xincheng Business Center,  
Qianshan Rd. Hefei 230022 China

Tel : (0086) 551 65418695

Fax: (0086) 551 65418697

Email: [info@tnjchem.com](mailto:info@tnjchem.com)

Site: [www.tnjchem.com](http://www.tnjchem.com)

## Material Safety Data Sheet

### Dimethyl carbonate

#### Section 1: Chemical Product and Company Identification

Product Name: Dimethyl carbonate

Catalog Codes: SLD1420

CAS#: 616-38-6

RTECS: FG0450000

TSCA: TSCA 8(b) inventory: Dimethyl carbonate

CI #: Not available.

Synonym: Methyl carbonate

Chemical Name: Carbonic acid, dimethyl ester

Chemical Formula: C3-H6-O3

Contact Information for Emergency: (0086) 551 65418681

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Tel : (0086) 551 65418695

Qianshan Road, Hefei

Fax: (0086) 551 65418697

230004Anhui

Email: [info@tnjchem.com](mailto:info@tnjchem.com)

China

Site: [www.tnjchem.com](http://www.tnjchem.com)

#### Section 2: Composition and Information on Ingredients

##### Composition:

Name	CAS # %	by Weight
Dimethyl carbonate	616-38-6	100

Toxicological Data on Ingredients: Dimethyl carbonate: ORAL (LD50): Acute: 6000 mg/kg [Mouse]. 13000 mg/kg [Rat].

DERMAL (LD50): Acute: >5000 mg/kg [Rabbit].

### Section 3: Hazards Identification

#### Potential Acute Health Effects:

Hazardous in case of skin contact (irritant), of eye contact (irritant). Slightly hazardous in case of skin contact (permeator), of ingestion, of inhalation.

#### Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

### Section 4: First Aid Measures

**Eye Contact:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

#### Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

#### Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

#### Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

#### Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

#### Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

**Serious Ingestion:** Not available.

### Section 5: Fire and Explosion Data

**Flammability of the Product:** Flammable.

**Auto-Ignition Temperature:** Not available.

**Flash Points:** CLOSED CUP: 18°C (64.4°F). OPEN CUP: 21.667°C (71°F).

**Flammable Limits:** LOWER: 4.22% UPPER: 12.87%

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>).

**Fire Hazards in Presence of Various Substances:**

Highly flammable in presence of open flames and sparks, of heat. Flammable in presence of oxidizing materials.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of heat.

**Fire Fighting Media and Instructions:**

Flammable liquid, insoluble in water. **SMALL FIRE:** Use DRY chemical powder. **LARGE FIRE:** Use water spray or fog. Never direct a water jet in the container in order to prevent any splashing of the product which could cause spreading of the fire.

**Special Remarks on Fire Hazards:**

Vapor may travel considerable distance to source of ignition and flash back. When heated to decomposition it emits acrid smoke and irritating fumes.

**Special Remarks on Explosion Hazards:** Not available.

## Section 6: Accidental Release Measures

**Small Spill:**

Absorb with an inert material and put the spilled material in an appropriate waste disposal.

**Large Spill:**

Flammable liquid, insoluble in water. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk.

Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

## Section 7: Handling and Storage

**Precautions:**

Keep away from heat.

Keep away from sources of ignition.

Ground all equipment containing material.

Do not ingest.

Do not breathe gas/fumes/ vapor/spray.

Wear suitable protective clothing.

If ingested, seek medical advice immediately and show the container or the label.

Avoid contact with skin and eyes.

Keep away from incompatibles such as oxidizing agents, reducing agents, acids, alkalis.

**Storage:**

Store in a segregated and approved area.

Keep container in a cool, well-ventilated area.

Keep container tightly closed and sealed until ready for use.

Avoid all possible sources of ignition (spark or flame).

### Section 8: Exposure Controls/Personal Protection

#### Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Personal Protection:** Splash goggles. Lab coat. Gloves.

#### Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

#### Exposure Limits:

TWA: 200 STEL: 400 (ppm) Consult local authorities for acceptable exposure limits.

### Section 9: Physical and Chemical Properties

**Physical state and appearance:** Liquid.

**Odor:** Pleasant.

**Taste:** Not available.

**Molecular Weight:** 90.08 g/mole

**Color:** Colorless. Clear

**pH (1% soln/water):** Not applicable.

**Boiling Point:** 90°C (194°F) - 91 C.

**Melting Point:** 2°C (35.6°F) - 4 C.

**Critical Temperature:** 274.85°C (526.7°F)

#### Specific Gravity:

1.069 @ 20 C.(Water = 1) 1.0636 @ 25 C.

**Vapor Pressure:** 5.6 kPa (@ 20°C)

**Vapor Density:** 3.1 (Air = 1)

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** Not available.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** Not available.

**Solubility:** Insoluble in cold water, hot water.

### Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Heat, ignition sources, incompatible materials

**Incompatibility with various substances:**

Highly reactive with oxidizing agents. Reactive with reducing agents, acids, alkalis.

**Corrosivity:** Not available.

**Special Remarks on Reactivity:** Violent reaction or ignition on contact with potassium tert-butoxide.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

#### Section 11: Toxicological Information

**Routes of Entry:** Absorbed through skin. Eye contact. Inhalation. Ingestion.

**Toxicity to Animals:**

Acute oral toxicity (LD50): 6000 mg/kg [Mouse]. Acute dermal toxicity (LD50): >5000 mg/kg [Rabbit].

**Chronic Effects on Humans:** May cause damage to the following organs: central nervous system (CNS).

**Other Toxic Effects on Humans:**

Hazardous in case of skin contact (irritant). Slightly hazardous in case of skin contact (permeator), of ingestion, of inhalation.

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:** Not available.

**Special Remarks on other Toxic Effects on Humans:**

**Acute Potential Health Effects:** Skin: Causes skin irritation. It can be absorbed through the skin. Eyes: Causes eye irritation.

**Inhalation:** May cause respiratory tract irritation. May cause drowsiness, unconsciousness, and central nervous system depression. Vapors may cause dizziness or suffocation. **Ingestion:** May cause irritation of the digestive tract. The toxicological properties of this substance have not been fully investigated.

#### Section 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The product itself and its products of degradation are not toxic.

**Special Remarks on the Products of Biodegradation:** Not available.

#### Section 13: Disposal Considerations

**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

#### Section 14: Transport Information

**DOT Classification:** CLASS 3: Combustible liquid  
**Identification:** : Dimethyl Carbonate UNNA: 1161 PG: II  
**Special Provisions for Transport:** Not available.

#### Section 15: Other Regulatory Information

**Federal and State Regulations:**

Connecticut hazardous material survey.: Dimethyl carbonate Pennsylvania RTK: Dimethyl carbonate  
Florida: Dimethyl carbonate Massachusetts RTK: Dimethyl carbonate New Jersey: Dimethyl carbonate  
TSCA 8(b) inventory: Dimethyl carbonate

**Other Regulations:**

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

**Other Classifications:**

**WHMIS (Canada):** CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).

**DSCL (EEC):**

R11- Highly flammable. S9- Keep container in a well-ventilated place. S16- Keep away from sources of ignition - No smoking.

S29- Do not empty into drains. S33- Take precautionary measures against static discharges.

**HMIS (U.S.A.):**

**Health Hazard:** 2

**Fire Hazard:** 3

**Reactivity:** 0

**Personal Protection:** j

**National Fire Protection Association (U.S.A.):**

**Health:** 1

**Flammability:** 3

**Reactivity:** 0

**Specific hazard:**

**Protective Equipment:**

Gloves. Lab coat. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

#### Section 16: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

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