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1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Product identifiers

Product name: Dimethyl Carbonate
CAS #: 616-38-6
EINECS #: 210-478-4

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses: DMC is a perfect methylating agent, carbonylating agent, methoxylating agent and methyloaring agent with active chemical properties. It can be used into produce polypropylene carbonate. In pharmaceutical and pesticide, It can be used into produce ciprofloxacin and carbadox. Also it is an indispensable raw material to produce lithium battery electrolyte. It is acting as a good solvent for coating, paints, ink and adhesive.

Uses advised against: No data available.

1.3. Details of the supplier of the safety data sheet

Company: SHANDONG WELLS CHEMICALS CO.,LTD
Detailed Address: Xishui industrial zone, Guangrao county,Dongying, Shandong,China,257336
Telephone: +86 546-6501666
Fax: +86 546-6501777
E-mail address: 641029019@qq.com

1.4. Emergency telephone number

Emergency Phone #: +86-135-8834-2322

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to GHS Revised 8-2019 Version.

Flammable liquids (Category 2), H225

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2. Label elements

Labelling according Regulation GHS Revised 8-2019 Version.



Danger

Hazard pictograms:

Signal word:

Hazard statement(s)

H225 Highly flammable liquid and vapour.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces.-No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P243 Take precautionary measures against static discharge.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303 + P361 + P353 If on skin (or hair): Remove/Take off immediately all contaminated clothing.Rinse skin with water/shower.

P370 + P378 In case of fire: Use dry chemical powder, water spray or fog for extinction.

P403 + P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients information

Chemical Name	Synonyms	CAS	EINECS	Classification according to GHS	Concentration
Dimethyl carbonate	4-Methyl-1,3-dioxolan-2-one	616-38-6	210-478-4	Flammable liquids, Category 2;H225	≥99.9

Additional information

Full text of H-statement(s): see section 16.

The rest unspecified ingredients are impurities, and they are not hazard.

4. FIRST AID MEASURES

4.1. Description of first aid measures

General advice Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact Wash off with soap and plenty of water. Consult a physician.
In case of eye contact Flush eyes with water as a precaution..
If swallowed DO NOT induce vomiting. Never give anything by mouth to an unconscious person.
Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3. Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media: Solid water jet ineffective as extinguishing medium.

5.2. Special hazards arising from the substance or mixture

Extremely flammable liquid and vapor. Pay attention to flashback. Containers may explode in the heat of a fire. Vapour are heavier than air and may spread along floors, can spread along the ground and collect in low or confined areas. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Hazardous combustion products: carbon monoxide carbon dioxide.

5.3. Special protective equipment and precautions for firefighters

Wear self contained breathing apparatus for fire fighting if necessary. As in any fire, wear a self-contained breathing apparatus in pressure-demand, and full protective gear. Use water spray to keep fire-exposed containers cool.

5.4. Advice for firefighters

Firefighting instructions: Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Avoid breathing vapour, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

Beware of vapour accumulating to form explosive concentrations. Use proper personal protective equipment as indicated in Section 8. "Exposure controls/personal protection".

6.2. Environmental precautions

Shall not handle chemicals without emissions to the environment. Avoid release to the environment. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment: Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute/disperse combustible gas/vapour with water curtain. Dilute narcotic gases/vapours with water spray. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills.

Methods for cleaning up: Take up liquid spill into absorbent material. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Take up liquid spill into absorbent material, e.g.: dry sand/earth/vermiculite or powdered limestone. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Take collected spill to manufacturer/competent authority. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling. Notify authorities if product enters sewers or public waters.

6.4. Reference to other sections

Dispose of materials or solid residues at an authorized site.
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Ensure good ventilation of the work station. Comply with the legal requirements. Clean contaminated clothing. Handle uncleaned empty containers as full ones. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Use spark-/explosion-proof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tightly closed. Measure the concentration in the air regularly. Work under local exhaust/ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment.

7.2. Specific end uses

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Components with workplace control parameters

8.2. Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before

breaks and at the end of workday.

Personal protective equipment

Eye/face protection	Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Full contact	Material: butyl-rubber Minimum layer thickness: 0,3 mm Break through time: 480 min
Splash contact	Material: butyl-rubber Minimum layer thickness: 0,3 mm Break through time: 480 min
Body Protection	Impervious clothing, Flame retardant anti-static protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Control of environmental exposure	Prevent further leakage or spillage if safe to do so. Do not allow material to be released to the environment without the proper governmental permits.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state :	Liquid	Vapor pressure :	53 hPa
Appearance :	Liquid.	Vapor pressure at 50 °C :	300 hPa
Molecular mass :	90.09 g/mol	Relative vapor density at 20 °C :	3.1
Color :	Colourless	Relative density :	1.07
Odor :	Pleasant odour	Relative density of saturated gas/air mixture :	1.1
Odor threshold :	No data available	Specific gravity / density :	1070 kg/m ³
PH:	No data available	Solubility:	
Relative evaporation rate (butyl acetate=1) :	No data available	Soluble in ethanol, ether and tetrachloromethane.	
Melting point :	2 °C	Water:	0.0149 g/100ml
Freezing point :	No data available	Log Pow :	No data available
Boiling point :	0 °C	Log Kow :	No data available
Flash point :	18 °C	Viscosity, kinematic :	No data available
Auto-ignition temperature :	465 °C	Viscosity, dynamic :	No data available
Decomposition temperature :	No data available	Explosive properties :	No data available
Flammability (solid, gas) :	No data available	Oxidizing properties :	No data available
		Explosive limits :	9.5 - 24.5 vol %

9.2. Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1. Chemical stability

Stable under recommended storage conditions.

10.2. Possibility of hazardous reactions

Reacts violently with oxidants and potassium tert-butoxide causing fire hazard. The substance decomposes on burning producing irritating fumes.

10.3. Conditions to avoid

Incompatible materials, ignition sources, excess heat, flames and sparks.

10.4. Incompatible materials

Strong oxidizing agents, potassium tert-butoxide.

10.5. Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon monoxide, Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

- LD50 Oral - Rat - male and female - > 5.000 mg/kg (OECD Test Guideline 401)
- LC50 Inhalation - Rat - male and female - 4 h - > 5,36 mg/l (OECD Test Guideline 403)
- LD50 Dermal - Rabbit - male and female - > 2.000 mg/kg

Skin corrosion/irritation

- Skin - rabbit
- Result: No skin irritation (OECD Test Guideline 404)

Serious eye damage/eye irritation

- Eyes – rabbit
- Result: No eye irritation

Respiratory or skin sensitization

- Freund's complete adjuvant test - Guinea pig
- Result: negative (OECD Test Guideline 406)

Germ cell mutagenicity

- Chromosome aberration test in vitro
- lymphocyte
- Result: negative

Carcinogenicity

- No data available
- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

- Reproductive toxicity - Rat - male and female

Specific target organ toxicity - single exposure

- No toxicity to reproduction

Specific target organ toxicity - repeated exposure

- No data available

Aspiration hazard

- No data available

Additional Information

- RTECS: FG0450000

Signs and Symptoms of Exposure

- To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

- Toxicity to fish
Flow-through test LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h (OECD Test Guideline 203)
- Toxicity to daphnia and other aquatic invertebrates
Static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)
- Toxicity to algae
Static test EC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h (OECD Test Guideline 201)

12.2. Persistence and degradability

- Biodegradability
Aerobic - Exposure time 28 d
Result: 88 % - Readily biodegradable (OECD Test Guideline 301C)

12.3. Bioaccumulative potential

- No data available

12.4. Mobility in soil

- No data available

12.5. Results of PBT and vPvB assessment

- No data available

12.6. Other adverse effects

- No data available

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

13.2. Additional information

A small amount of leakage: the sand, vermiculite or other inert materials to absorb. Open the collection to the place of burial, evaporation, or incineration. Substantial leak: to build a dike or trench to accept; foam coverage, lower vapor disasters. Ex pump used to transfer tankers or exclusive collector, the recovery or treatment to the waste disposal sites.

14. TRANSPORT INFORMATION

14.1. UN number

ADR/RID: 1161

IMDG: 1161

IATA: 1161

14.2. UN proper shipping name	ADR/RID: DIMETHYL CARBONATE	IMDG: DIMETHYL CARBONATE	IATA: DIMETHYL CARBONATE
14.3. Transport hazard class(es)	ADR/RID: 3	IMDG: 3	IATA: 3
14.4. Packaging group	ADR/RID: II	IMDG: II	IATA: II
14.5. Environmental hazards	ADR/RID: NO	IMDG Marine pollutant: NO	IATA: NO
14.6. Special precautions for user	No data available		

15. REGULATORY INFORMATION

This safety data sheet complies with the requirements of regulation globally harmonized system of classification and labelling of chemicals drafted and revised by the United Nations in 2019.

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

This text is compiled and revised refers to the current relevant norms promulgated by organization and countries including but not limited to the United Nations, The People's Republic of China, United States and European union as such.

China regulations as per GB/T 16483-2008, GB/T 17519-2013 and GB30000.X-2013

US federal and state regulations TSCA: CAS# 616-38-6 is listed on the TSCA inventory.

Classification according to regulation (EC) no. 1272/2008 [CLP] and REACH dated 2019.7.1

15.2. Chemical safety assessment

CAS# 616-38-6 is listed on the inventory.

EINECS#210-478-4 is listed European inventory of existing commercial chemical substances

For this product a chemical safety assessment was not carried out from other SDS compile regulations

16. OTHER INFORMATION

16.1. Full text of H-Statements referred to under sections 2 and 3.

H225 Highly flammable liquid and vapour.

Revision Date: JUN.09,2020. Once the new version is put into use, the previous regulations will be invalid immediately

16.2. Abbreviations and acronyms may be mentioned on this MSDS

GHS: Globally Harmonized System of Classification and Labelling of Chemicals.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

EINECS: European Inventory of Existing Commercial Chemical Substances.

RID: European Rail Transport.

IMDG: International Maritime Code for Dangerous Goods.

IATA: International Air Transport Association.

OSHA: The United States Occupational Safety and Health Administration.

TSCA: Toxic Substances Control Act, The American chemical inventory.

HMIS: Hazardous Materials Identification System set by OSHA

DSD/DPD: Dangerous Substance Directive (67/548/EEC)/Dangerous Preparation Directive (1999/45/EC).

IECSC: Inventory of existing chemical substances in China.

HS Code: The Harmonized Commodity Description and Coding System by World Customs Organization.

DSL: Domestic Substances List, The Canadian chemical inventory.

WHMIS: Workplace Hazardous Materials Information System on Health Canada's Web site.

AICS: The Australian Inventory of Chemical Substances.

ECL: Existing Chemicals List, the Korean chemical inventory.

MITI: Japanese Existing and New Chemical Substances

16.3. Declare to reader

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The information in this Material Safety Data Sheet (MSDS) was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

*****THE END*****