



SAFETY DATA SHEET DIMETHYL CARBONATE

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	DIMETHYL CARBONATE
Chemical name	dimethyl carbonate
Product number	630
REACH registration number	01-2119548399-23-XXXX
CAS number	616-38-6
EU index number	607-013-00-6
EC number	210-478-4

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

Identified uses	Chemical Intermediate Monomer Process regulator Paint. Sealant. Adhesive. inks Industrial Solvent Cleaning agent. Laboratory reagent.
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1.3. Details of the supplier of the safety data sheet

Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com
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1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
Sds No.	630

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Flam. Liq. 2 - H225
Health hazards	Not Classified
Environmental hazards	Not Classified

2.2. Label elements

EC number	210-478-4
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DIMETHYL CARBONATE

Hazard pictograms



Signal word	Danger
Hazard statements	H225 Highly flammable liquid and vapour.
Precautionary statements	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P240 Ground and bond container and receiving equipment. P403+P235 Store in a well-ventilated place. Keep cool.

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name	DIMETHYL CARBONATE
Chemical name	dimethyl carbonate
REACH registration number	01-2119548399-23-XXXX
EU index number	607-013-00-6
CAS number	616-38-6
EC number	210-478-4
Composition comments	The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse nose and mouth with water. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis. Get medical attention if any discomfort continues.
Skin contact	After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Get medical attention if any discomfort continues.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist after washing.

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

Inhalation	Gas or vapour in high concentrations may irritate the respiratory system. Prolonged or repeated exposure to vapours in high concentrations may cause the following adverse effects: Pulmonary oedema, frothy sputum.
Ingestion	The product irritates mucous membranes and may cause abdominal discomfort if swallowed.

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Eye contact May cause temporary eye irritation.

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

Notes for the doctor Treat symptomatically. If in doubt, get medical attention promptly.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Highly flammable liquid and vapour. When heated and in case of fire, toxic vapours/gases may be formed.

Hazardous combustion products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of the following substances: Carbon.

5.3. Advice for firefighters

Protective actions during firefighting No action shall be taken without appropriate training or involving any personal risk. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Contain and collect extinguishing water. Control run-off water by containing and keeping it out of sewers and watercourses. Evacuate area.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Provide adequate ventilation. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Avoid heat, flames and other sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage.

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Highly flammable liquid and vapour. Absorb spillage with inert, damp, non-combustible material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Avoid the spillage or runoff entering drains, sewers or watercourses.

6.4. Reference to other sections

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet. Collect and dispose of spillage as indicated in Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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Usage precautions	Provide adequate ventilation. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. 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 discharges. Vapours may form explosive mixtures with air. Use explosion-proof electrical, ventilating and lighting equipment.
Advice on general occupational hygiene	Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions	Store in tightly-closed, original container in a dry, cool and well-ventilated place. Ground/bond container and receiving equipment. Avoid exposure to high temperatures or direct sunlight. Keep away from food, drink and animal feeding stuffs. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Store away from the following materials: Oxidising agents. Reducing agents. May attack some plastics, rubber and coatings.
Storage class	Flammable liquid storage.

7.3. Specific end use(s)

Specific end use(s)	The identified uses for this product are detailed in Section 1.2.
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SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

DNEL	Workers - Dermal; Long term systemic effects: 5 mg/kg/day Workers - Inhalation; Long term systemic effects: 34.9 mg/m ³ General population - Oral; Long term systemic effects: 2.5 mg/kg/day General population - Inhalation; Long term systemic effects: 8.7 mg/m ³ General population - Dermal; Long term systemic effects: 2.5 mg/kg/day
PNEC	Fresh water; 0.5 mg/l marine water; 0.05 mg/l Fresh water; 1 mg/l STP; 188 mg/l

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection

The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Butyl rubber. Do not use the following: Rubber (natural, latex). Chloroprene rubber. Nitrile rubber. Viton rubber (fluoro rubber). Polyvinyl chloride (PVC). To protect hands from chemicals, gloves should comply with European Standard EN374.

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Other skin and body protection	Wear appropriate clothing to prevent any possibility of skin contact. For the greatest protection, clothing should include anti-static overalls, boots and gloves. Wear fire/flame resistant/retardant clothing.
Hygiene measures	When using do not eat, drink or smoke. Wash at the end of each work shift and before eating, smoking and using the toilet. Remove contaminated clothing and protective equipment before entering eating areas. Eye wash facilities and emergency shower must be available when handling this product.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. If ventilation is inadequate, suitable respiratory protection must be worn. Gas filter, type A EN 136/140/141/145/143/149

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Characteristic.
Odour threshold	No information available.
pH	No information available.
Melting point	4.65°C
Pour Point	No information available.
Freezing Point	No information available.
Initial boiling point and range	90.2°C @ 101.3 kPa
Flash point	16.7°C Closed cup.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 4.22 % Upper flammable/explosive limit: 12.87 %
Other flammability	No information available.
Vapour pressure	7570.4 Pa @ 25.15°C
Vapour density	No information available.
Relative density	1.06 @ 25°C
Bulk density	No information available.
Solubility(ies)	Soluble in water. 114.7 g/l water @ 20°C
Partition coefficient	log Pow: 0.354 OECD 107
Auto-ignition temperature	458°C
Decomposition Temperature	No information available.
Viscosity	0.585 mPa s @ 25°C

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Explosive properties Not considered to be explosive. Vapours may form explosive mixtures with air.

Explosive under the influence of a flame No information available.

Oxidising properties Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information Not determined.

Refractive index No information available.

Particle size No information available.

Molecular weight No information available.

Volatility No information available.

Saturation concentration No information available.

Critical temperature No information available.

Volatile organic compound No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Highly flammable liquid and vapour. Vapours may form explosive mixtures with air.

10.4. Conditions to avoid

Conditions to avoid Keep away from heat, sparks and open flame. Avoid exposure to high temperatures or direct sunlight. Eliminate all sources of ignition.

10.5. Incompatible materials

Materials to avoid Oxidising agents. Reducing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of the following substances: Carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀) Based on available data the classification criteria are not met.
LD₅₀ > 5000 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.
LD₅₀ > 2000 mg/kg, Dermal, Rabbit

Acute toxicity - inhalation

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Acute toxicity inhalation (LC₅₀ vapours mg/l) 5.36

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.
LC₅₀ 5.36 mg/l, 4 hour, Vapour Rat

ATE inhalation (vapours mg/l) 5.36

Skin corrosion/irritation

Skin corrosion/irritation Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Genotoxicity - in vivo Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.
Fertility, One-generation study - NOAEL 500 mg/kg/day, Oral, Rat, Male, Female F1

Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.
NOAEL 90d: > 500 mg/kg/day, Oral, Rat

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system. Prolonged or repeated exposure may cause the following adverse effects: Pulmonary oedema, frothy sputum.

Ingestion The product irritates mucous membranes and may cause abdominal discomfort if swallowed.

Skin contact Prolonged skin contact may cause temporary irritation.

Eye contact May cause temporary eye irritation.

SECTION 12: Ecological information

Ecotoxicity The product is not expected to be hazardous to the environment. However, large or frequent spills may have hazardous effects on the environment.

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12.1. Toxicity

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hour: >= 100 mg/l, Brachydanio rerio (Zebra Fish) OECD 203
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hour: > 100 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	ErC ₅₀ , 72 hour: > 100 mg/l, Pseudokirchneriella subcapitata OECD 201

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates	NOEC, 21 day: 25 mg/l, Daphnia magna OECD 211
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12.2. Persistence and degradability

Persistence and degradability	The product is readily biodegradable.
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Biodegradation	- Degradation 86%: 28 day OECD 301C
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12.3. Bioaccumulative potential

Bioaccumulative potential	Bioaccumulation is unlikely.
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Partition coefficient	log Pow: 0.354 OECD 107
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12.4. Mobility in soil

Mobility	Soluble in water.
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12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	This substance is not classified as PBT or vPvB according to current EU criteria.
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12.6. Other adverse effects

Other adverse effects	None known.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information	Waste is classified as hazardous waste. Do not puncture or incinerate, even when empty. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.
Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General	Wear protective clothing as described in Section 8 of this safety data sheet.
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14.1. UN number

UN No. (ADR/RID)	1161
UN No. (IMDG)	1161
UN No. (ICAO)	1161
UN No. (ADN)	1161

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14.2. UN proper shipping name

Proper shipping name (ADR/RID) DIMETHYL CARBONATE

Proper shipping name (IMDG) DIMETHYL CARBONATE

Proper shipping name (ICAO) DIMETHYL CARBONATE

Proper shipping name (ADN) DIMETHYL CARBONATE

14.3. Transport hazard class(es)

ADR/RID class 3

ADR/RID classification code F1

ADR/RID label 3

IMDG class 3

ICAO class/division 3

ADN class 3

Transport labels



14.4. Packing group

ADR/RID packing group II

IMDG packing group II

ICAO packing group II

ADN packing group II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS F-E, S-D

ADR transport category 2

Emergency Action Code •3YE

Hazard Identification Number (ADR/RID) 33

Tunnel restriction code (D/E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

DIMETHYL CARBONATE

EU legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

Commission Regulation (EU) No 2015/830 of 28 May 2015.

This product may impact SEVESO storage regulations.

Restrictions (Annex XVII Regulation 1907/2006)

CAUTION - Chemical may be subject to REACH RESTRICTIONS - see Annex XVII. This product is/contains a substance that is included in REGULATION (EC) No 1907/2006 (REACH) ANNEX XVII - RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES. Entry number: 3

Seveso Directive - Control of P5c
major accident hazards

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

SECTION 16: Other information

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Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
 CAS: Chemical Abstracts Service.
 DNEL: Derived No Effect Level.
 IATA: International Air Transport Association.
 IMDG: International Maritime Dangerous Goods.
 Kow: Octanol-water partition coefficient.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 PBT: Persistent, Bioaccumulative and Toxic substance.
 PNEC: Predicted No Effect Concentration.
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
 vPvB: Very Persistent and Very Bioaccumulative.
 IARC: International Agency for Research on Cancer.
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
 cATpE: Converted Acute Toxicity Point Estimate.
 BCF: Bioconcentration Factor.
 BOD: Biochemical Oxygen Demand.
 EC₅₀: 50% of maximal Effective Concentration.
 LOAEC: Lowest Observed Adverse Effect Concentration.
 LOAEL: Lowest Observed Adverse Effect Level.
 NOAEC: No Observed Adverse Effect Concentration.
 NOAEL: No Observed Adverse Effect Level.
 NOEC: No Observed Effect Concentration.
 LOEC: Lowest Observed Effect Concentration.
 DMEL: Derived Minimal Effect Level.
 EL50: Exposure Limit 50
 hPa: Hectopascal
 LL50: Lethal Loading fifty
 OECD: Organisation for Economic Co-operation and Development
 POW: Octanol-water partition coefficient
 SCBA: self-contained breathing apparatus
 STP: Sewage Treatment Plant
 VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
 Aquatic Acute = Hazardous to the aquatic environment (acute)
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

Supplier's information.

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date

01/06/2021

Version number

3.000

Supersedes date

30/01/2020

SDS number

630

DIMETHYL CARBONATE

SDS status	Approved.
Hazard statements in full	H225 Highly flammable liquid and vapour.
Signature	Lisa Bland

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.