

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Dimethyl carbonate for analysis, Reag. Ph. Eur.

Revision date: 19.07.2023

Product code: 27766

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

### 1.1. Product identifier

Dimethyl carbonate for analysis, Reag. Ph. Eur.

REACH Registration Number: 01-2119980035-39-XXXX  
CAS No: 616-38-6  
Index No: 607-013-00-6  
EC No: 210-478-4

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

#### Use of the substance/mixture

Laboratory chemical  
Industrial uses: Uses of substances as such or in preparations at industrial sites  
Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Uses advised against

Do not use for private purposes (household).

### 1.3. Details of the supplier of the safety data sheet

Company name: AnalytiChem GmbH  
Street: Stempelstraße 6  
Place: D-47167 Duisburg  
Telephone: 0203/5194-0  
E-mail: info@analytichem.de  
Contact person: Abteilung Produktsicherheit  
E-mail: produktsicherheit@analytichem.de  
Internet: www.analytichem.de  
Responsible Department: Abteilung Produktsicherheit  
Telefax: 0203/5194-290  
Telephone: 0203/5194-107/117

### 1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

### Further Information

No data available

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Regulation (EC) No 1272/2008

Flam. Liq. 2; H225

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

#### Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:



#### Hazard statements

H225 Highly flammable liquid and vapour.

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**Precautionary statements**

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
- P403+P235 Store in a well-ventilated place. Keep cool.

**2.3. Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients****3.1. Substances**

Sum formula: (CH<sub>3</sub>O)<sub>2</sub>CO  
Molecular weight: 90,08 g/mol

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
616-38-6	dimethyl carbonate			100 %
	210-478-4	607-013-00-6	01-2119980035-39-XXXX	
	Flam. Liq. 2; H225			

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
616-38-6	210-478-4	dimethyl carbonate	100 %
	inhalation: LC50 = > 5,36 mg/l (vapours); dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 5000 mg/kg		

**Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

No data available

**After inhalation**

Provide fresh air.  
Call a doctor if you feel unwell.

**After contact with skin**

Wash immediately with: Water  
Take off immediately all contaminated clothing and wash it before reuse.

**After contact with eyes**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

**After ingestion**

Rinse mouth immediately and drink plenty of water.  
Call a physician immediately.

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

Irritant  
Gastrointestinal complaints  
Inebriation  
Unconsciousness  
Respiratory complaints

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

No data available

### **SECTION 5: Firefighting measures**

#### **5.1. Extinguishing media**

##### **Suitable extinguishing media**

Water spray jet, Carbon dioxide (CO<sub>2</sub>), Foam, Extinguishing powder.

##### **Unsuitable extinguishing media**

no restriction

#### **5.2. Special hazards arising from the substance or mixture**

Combustible liquid.  
Vapours are heavier than air, spread along floors and form explosive mixtures with air.  
Hazardous combustion products In case of fire may be liberated: Carbon dioxide (CO<sub>2</sub>) Carbon monoxide  
Beware of reignition.

#### **5.3. Advice for firefighters**

Remove persons to safety. Do not inhale explosion and combustion gases.  
Avoid contact with skin, eyes and clothes.  
In case of fire: Wear self-contained breathing apparatus.  
Use water spray jet to protect personnel and to cool endangered containers.

#### **Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.  
Suppress gases/vapours/mists with water spray jet.  
Move undamaged containers from immediate hazard area if it can be done safely.

### **SECTION 6: Accidental release measures**

#### **6.1. Personal precautions, protective equipment and emergency procedures**

##### **General advice**

Keep away from sources of ignition - No smoking.  
This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe).  
Take action to prevent static discharges.

##### **For non-emergency personnel**

Provide adequate ventilation.  
Use personal protection equipment.  
Avoid contact with skin, eyes and clothes.  
Remove persons to safety.  
Emergency procedures  
Do not breathe dust/fume/gas/mist/vapours/spray.

##### **For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

#### **6.2. Environmental precautions**

Do not allow to enter into surface water or drains.  
The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

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Danger of explosion

#### **6.3. Methods and material for containment and cleaning up**

##### **For containment**

- Cover drains.
- Prevent spread over a wide area (e.g. by containment or oil barriers).
- Collect in closed and suitable containers for disposal.
- Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

##### **For cleaning up**

- Clean contaminated articles and floor according to the environmental legislation.

##### **Other information**

- Provide adequate ventilation.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Wear breathing apparatus if exposed to vapours/dusts/aerosols.

#### **6.4. Reference to other sections**

- Safe handling: see section 7
- Personal protection equipment: see section 8
- Disposal: see section 13

## **SECTION 7: Handling and storage**

### **7.1. Precautions for safe handling**

#### **Advice on safe handling**

- Read label before use. Handle and open container with care.
- When using do not eat, drink, smoke, sniff. Keep container tightly closed.
- Use personal protection equipment. Use extractor hood (laboratory).
- Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation.

#### **Advice on protection against fire and explosion**

- Take action to prevent static discharges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

#### **Advice on general occupational hygiene**

- Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.
- Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

#### **Further information on handling**

- Take off immediately all contaminated clothing and wash it before reuse.
- If handled uncovered, arrangements with local exhaust ventilation have to be used.
- Draw up and observe skin protection programme.
- Wash hands and face before breaks and after work and take a shower if necessary.

### **7.2. Conditions for safe storage, including any incompatibilities**

#### **Requirements for storage rooms and vessels**

- Keep container tightly closed and dry.
- Keep in a cool, well-ventilated place.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

#### **Hints on joint storage**

- Do not store together with: Oxidising agent. Pyrophoric or self-heating substances.

#### **Further information on storage conditions**

- Vapours may form explosive mixtures with air.
- storage temperature < +30°C

### **7.3. Specific end use(s)**

- Laboratory use Laboratory chemical

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**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**DNEL/DMEL values**

CAS No	Substance	Exposure route	Effect	Value
616-38-6	dimethyl carbonate			
Worker DNEL, long-term		inhalation	systemic	17,6 mg/m <sup>3</sup>
Worker DNEL, acute		inhalation	systemic	57 mg/m <sup>3</sup>
Worker DNEL, acute		inhalation	local	57 mg/m <sup>3</sup>
Worker DNEL, long-term		dermal	systemic	5 mg/kg bw/day
Worker DNEL, acute		dermal	systemic	66,7 mg/kg bw/day
Worker DNEL, acute		dermal	local	17,7 mg/cm <sup>2</sup>
Consumer DNEL, long-term		inhalation	systemic	4,4 mg/m <sup>3</sup>
Consumer DNEL, acute		inhalation	systemic	42,5 mg/m <sup>3</sup>
Consumer DNEL, acute		inhalation	local	42,5 mg/m <sup>3</sup>
Consumer DNEL, long-term		dermal	systemic	2,5 mg/kg bw/day
Consumer DNEL, acute		dermal	systemic	33,3 mg/kg bw/day
Consumer DNEL, acute		dermal	local	8,9 mg/cm <sup>2</sup>
Consumer DNEL, long-term		oral	systemic	2,5 mg/kg bw/day
Consumer DNEL, acute		oral	systemic	50 mg/kg bw/day

**PNEC values**

CAS No	Substance	Value
616-38-6	dimethyl carbonate	
Freshwater		0,5 mg/l
Freshwater (intermittent releases)		1 mg/l
Marine water		0,05 mg/l
Micro-organisms in sewage treatment plants (STP)		188 mg/l

**8.2. Exposure controls**

**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Suitable eye protection: goggles.

**Hand protection**

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact: No data available

By short-term hand contact

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Trade name/designation KCL 898 Butoject®  
Suitable material: Butyl caoutchouc (butyl rubber) 0,7 mm  
Wearing time with occasional contact (splashes): > 240 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet (>, <) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

#### Skin protection

Flame-retardant protective clothing. Wear anti-static footwear and clothing

#### Respiratory protection

Respiratory protection necessary at: aerosol or mist formation  
Filtering device with filter or ventilator filtering device of type: A

#### Environmental exposure controls

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.  
Danger of explosion

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	colourless
Odour:	characteristic
Odour threshold:	No data available

#### Test method

Melting point/freezing point:	0,5 -4 ,7 °C
Boiling point or initial boiling point and boiling range:	90 °C
Flammability:	not applicable
Lower explosion limits:	4,22 vol. %
Upper explosion limits:	12,87 vol. %
Flash point:	16 °C
Auto-ignition temperature:	458 °C
Decomposition temperature:	not determined
pH-Value:	No data available
Viscosity / kinematic:	No data available
Water solubility: (at 20 °C)	139 g/L
Solubility in other solvents	not determined
Dissolution rate:	No data available
Partition coefficient n-octanol/water:	log Pow: 0,23
Vapour pressure: (at 20 °C)	53 hPa
Vapour pressure:	No data available
Density:	1,07 g/cm <sup>3</sup>
Relative density:	No data available
Bulk density:	No data available
Relative vapour density:	not determined
Particle characteristics:	No data available

### 9.2. Other information

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**Information with regard to physical hazard classes**

Explosive properties

Vapours can form explosive mixtures with air.

Sustaining combustion:

Sustaining combustion

Self-ignition temperature

455°C

Solid:

not applicable

Gas:

not applicable

Oxidizing properties

Not oxidising.

**Other safety characteristics**

Evaporation rate:

not determined

Solvent separation test:

No data available

Solvent content:

No data available

Solid content:

not determined

Sublimation point:

No data available

Softening point:

No data available

Pour point:

No data available

No data available:

Viscosity / dynamic:  
(at 20 °C)

0,625 mPa·s

Flow time:

No data available

**Further Information**

No data available

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

Highly flammable.

Vapours can form explosive mixtures with air.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

Oxidising agent

Reducing agent

Acids

Base

**10.4. Conditions to avoid**

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

**10.6. Hazardous decomposition products**

Hazardous combustion products

In case of fire may be liberated: Carbon dioxide (CO<sub>2</sub>) Carbon monoxide

**Further information**

No data available

**SECTION 11: Toxicological information**

**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

**Toxicokinetics, metabolism and distribution**

No data available

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**Acute toxicity**

Based on available data, the classification criteria are not met.  
May cause respiratory irritation.  
Pulmonary oedema

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
616-38-6	dimethyl carbonate				
	oral	LD50 > 5000 mg/kg	Rat	Study report (1992)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rabbit	Study report (1992)	No specific test guideline was followed,
	inhalation (4 h) vapour	LC50 > 5,36 mg/l	Rat	Study report (1992)	OECD Guideline 403

**Irritation and corrosivity**

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

**Sensitising effects**

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

**Carcinogenic/mutagenic/toxic effects for reproduction**

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

**STOT-single exposure**

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

**STOT-repeated exposure**

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

**Aspiration hazard**

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

**Information on likely routes of exposure**

No data available

**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

No data available

**Practical experience**

No data available

**11.2. Information on other hazards**

**Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

**Other information**

No data available

**Further information**

- Irritant
- Gastrointestinal complaints
- Inebriation
- Unconsciousness
- Respiratory complaints

**SECTION 12: Ecological information**



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**12.1. Toxicity**

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

CAS No	Chemical name		Dose	[h]   [d]	Species	Source	Method
616-38-6	dimethyl carbonate						
	Acute fish toxicity	LC50 mg/l	>= 100	96 h	Danio rerio	Study report (2010)	EU Method C.1
	Acute algae toxicity	ErC50 mg/l	> 100	72 h	Pseudokirchneriella subcapitata	Study report (2000)	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	> 100	48 h	Daphnia magna	Study report (2000)	OECD Guideline 202
	Crustacea toxicity	NOEC	25 mg/l	21 d	Daphnia magna	Study report (2001)	OECD Guideline 211
	Acute bacteria toxicity	(EC50 mg/l)	> 1000	3 h	activated sludge of a predominantly domestic sewage	Study report (2003)	OECD Guideline 209

**12.2. Persistence and degradability**

88 %; 28 d  
OECD 301C  
Readily biodegradable (according to OECD criteria).

**12.3. Bioaccumulative potential**

No indication of bioaccumulation potential.

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
616-38-6	dimethyl carbonate	0,354

**BCF**

CAS No	Chemical name	BCF	Species	Source
616-38-6	dimethyl carbonate	< 3,2	fish	Unpublished calculat

**12.4. Mobility in soil**

No data available

**12.5. Results of PBT and vPvB assessment**

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

**12.7. Other adverse effects**

No data available

**Further information**

Avoid release to the environment.  
Do not empty into drains.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

Do not allow to enter into surface water or drains.  
Send to a physico-chemical treatment facility under observation of official regulations.  
Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

**Contaminated packaging**

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific

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to the industry and process.

Handle contaminated packages in the same way as the substance itself.

## SECTION 14: Transport information

## Land transport (ADR/RID)

<b>14.1. UN number or ID number:</b>	UN 1161
<b>14.2. UN proper shipping name:</b>	DIMETHYL CARBONATE
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	II
Hazard label:	3
Classification code:	F1
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	33
Tunnel restriction code:	D/E

## Inland waterways transport (ADN)

<b>14.1. UN number or ID number:</b>	UN 1161
<b>14.2. UN proper shipping name:</b>	DIMETHYL CARBONATE
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	II
Hazard label:	3
Classification code:	F1
Limited quantity:	1 L
Excepted quantity:	E2

## Marine transport (IMDG)

<b>14.1. UN number or ID number:</b>	UN 1161
<b>14.2. UN proper shipping name:</b>	DIMETHYL CARBONATE
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	II
Hazard label:	3
Special Provisions:	-
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-E, S-D

## Air transport (ICAO-TI/IATA-DGR)

<b>14.1. UN number or ID number:</b>	UN 1161
<b>14.2. UN proper shipping name:</b>	DIMETHYL CARBONATE
<b>14.3. Transport hazard class(es):</b>	3
<b>14.4. Packing group:</b>	II
Hazard label:	3
Limited quantity Passenger:	1 L
Passenger LQ:	Y341
Excepted quantity:	E2
IATA-packing instructions - Passenger:	353
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	364
IATA-max. quantity - Cargo:	60 L

## 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

## 14.6. Special precautions for user

Warning: Combustible liquid.

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#### 14.7. Maritime transport in bulk according to IMO instruments

not applicable

### SECTION 15: Regulatory information

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

##### EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40

Information according to 2012/18/EU  
(SEVESO III):

P5c FLAMMABLE LIQUIDS

##### National regulatory information

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D):

1 - slightly hazardous to water

#### 15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

### SECTION 16: Other information

#### Changes

This data sheet contains changes from the previous version in section(s): 9,11,12.

#### Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

Flam. Liq: Flammable liquid

#### Relevant H and EUH statements (number and full text)

H225 Highly flammable liquid and vapour.

#### Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.