

# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

Revision Date 13.02.2018

Version 9.10

SECTION 1. Identification of the su 1.1 Product identifier	bstance/mixture and of the company/undertaking
Catalogue No.	807051
Product name	Propylene carbonate for synthesis
REACH Registration Number	01-2119537232-48-XXXX
CAS-No.	108-32-7
1.2 Relevant identified uses of th	e substance or mixture and uses advised against
Identified uses	Chemical for synthesis, Cosmetic raw material
	In compliance with the conditions described in the annex to this safety data sheet.
1.3 Details of the supplier of the s	safety data sheet
Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	LS-QHC * e-mail: prodsafe@merckgroup.com
1.4 Emergency telephone number	Please contact the regional company representation in your country.
SECTION 2 Hazarda identification	

## SECTION 2. Hazards identification

## 2.1 Classification of the substance or mixture Classification (REGULATION (EC) No 1272/2008)

## according to Regulation (EC) No. 1907/2006

Catalogue No.807051Product namePropylene carbonate for synthesis

Eye irritation, Category 2, H319

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

#### 2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



*Signal word* Warning

*Hazard statements* H319 Causes serious eye irritation.

#### Precautionary statements

Response

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.



#### 2.3 Other hazards

None known.

## according to Regulation (EC) No. 1907/2006

Catalogue No. 807051 Product name Propylen

Propylene carbonate for synthesis

#### SECTION 3. Composition/information on ingredients

#### 3.1 Substance

C₄H₅O₃ (Hill)
607-194-00-1
203-572-1
102,09 g/mol

#### Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No.	Registration number	Classification
propylene carbo	onate <i>(&lt;= 100 % )</i>	
Substance does no	ot meet the criteria for PBT or v	PvB according to Regulation (EC) No 1907/2006, Annex XIII.
108-32-7	01-2119537232-48-	
	XXXX	Eye irritation, Category 2, H319

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

#### 3.2 Mixture

Not applicable

## SECTION 4. First aid measures

#### 4.1 Description of first aid measures

After inhalation: fresh air.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

## according to Regulation (EC) No. 1907/2006

Catalogue No.807051Product namePropylene carbonate for synthesis

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

Dizziness, Nausea, Stomach/intestinal disorders, Headache irritant effects

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

No information available.

#### **SECTION 5. Firefighting measures**

#### 5.1 Extinguishing media

Suitable extinguishing media Water, Foam, Carbon dioxide (CO2), Dry powder

*Unsuitable extinguishing media* For this substance/mixture no limitations of extinguishing agents are given.

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

Combustible. Vapours are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire.

#### 5.3 Advice for firefighters

Special protective equipment for firefighters In the event of fire, wear self-contained breathing apparatus.

#### Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

#### SECTION 6. Accidental release measures

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

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

## according to Regulation (EC) No. 1907/2006

Catalogue No.807051Product namePropylene carbonate for synthesis

Protective equipment see section 8.

#### 6.2 Environmental precautions

Do not let product enter drains.

#### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

#### 6.4 Reference to other sections

Indications about waste treatment see section 13.

#### SECTION 7. Handling and storage

#### 7.1 Precautions for safe handling

*Advice on safe handling* Observe label precautions.

*Hygiene measures* Change contaminated clothing. Wash hands after working with substance.

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

Storage conditions Tightly closed.

Recommended storage temperature see product label.

#### 7.3 Specific end use(s)

See exposure scenario in the Annex to this MSDS.

#### SECTION 8. Exposure controls/personal protection

#### 8.1 Control parameters

## according to Regulation (EC) No. 1907/2006

Catalogue No.807051Product namePropylene carbonate for synthesis

#### Derived No Effect Level (DNEL)

Worker DNEL, longterm	Systemic effects	dermal	50 mg/kg Body weight
Worker DNEL, longterm	Local effects	inhalation	20 mg/m³
Worker DNEL, longterm	Systemic effects	inhalation	176 mg/m³
Consumer DNEL, longterm	Systemic effects	dermal	25 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	inhalation	43,5 mg/m³
Consumer DNEL, longterm	Systemic effects	oral	25 mg/kg Body weight
Consumer DNEL, longterm	Local effects	inhalation	10 mg/m³

#### Predicted No Effect Concentration (PNEC)

PNEC Fresh water	0,9 mg/l
PNEC Marine water	0,09 mg/l
PNEC Aquatic intermittent release	9 mg/l
PNEC Sewage treatment plant	7400 mg/l
PNEC Soil	0,81 mg/kg

#### 8.2 Exposure controls

#### **Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

## according to Regulation (EC) No. 1907/2006

Catalogue No.807051Product namePropylene carbonate for synthesis

#### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	natural latex
Glove thickness:	0,6 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,40 mm
Break through time:	> 120 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 706 Lapren® (full contact), KCL 730 Camatril® -Velours (splash contact).

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).

Other protective equipment protective clothing

#### Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: filter ABEK

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be

## according to Regulation (EC) No. 1907/2006

Catalogue No.807051Product namePropylene carbonate for synthesis

properly documented.

#### Environmental exposure controls

Do not let product enter drains.

#### SECTION 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Form	liquid
Colour	colourless
Odour	like fruit
Odour Threshold	No information available.
рН	7,0 at 200 g/l 20 °C
Melting point	-49 °C
Boiling point/boiling range	243 °C at  1.013 hPa
Flash point	123 °C Method: open cup
Evaporation rate	No information available.
Flammability (solid, gas)	Not applicable
Lower explosion limit	1,8 %(V)

The Safety Data Sheets for catalogue items are available at www.merckgroup.com

# according to Regulation (EC) No. 1907/2006

Propylene carbonate for synthesis 14,3 %(V) 0,04 hPa at 20 °C
0,04 hPa
0,04 hPa
0,04 hPa
at 20 °C
No information available.
1,20 g/cm3
at 20 °C
No information available.
240 g/l
at 20 °C
log Pow: -0,48 (25 °C)
(experimental)
(IUCLID) Bioaccumulation is not expected.
No information available.
240 °C
(slow decomposition)
2,8 mPa.s
at 20 °C
Not classified as explosive.
none

## according to Regulation (EC) No. 1907/2006

Catalogue No.	807051	
Product name	Propylene carbonate for synthesis	
Ignition temperature	435 °C	
	DIN 51794	
Viscosity, kinematic	ca.1,4 mm2/s	
	at 43 °C	

#### SECTION 10. Stability and reactivity

#### 10.1 Reactivity

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

#### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

#### 10.3 Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents, Strong acids, strong reducing agents, Strong bases

#### 10.4 Conditions to avoid

Strong heating.

#### 10.5 Incompatible materials

various plastics

#### 10.6 Hazardous decomposition products

no information available

## according to Regulation (EC) No. 1907/2006

Catalogue No.

Product name

807051

Propylene carbonate for synthesis

#### SECTION 11. Toxicological information

#### 11.1 Information on toxicological effects

Acute oral toxicity LD50 Rat: > 5.000 mg/kg OECD Test Guideline 401

Acute inhalation toxicity

Symptoms: Possible damages:, mucosal irritations, After a latency period:, Lung oedema

Acute dermal toxicity LD50 Rabbit: > 20.000 mg/kg (IUCLID) Skin irritation Rabbit Result: No irritation OECD Test Guideline 404 Eye irritation Rabbit Result: Eye irritation OECD Test Guideline 405 Causes serious eye irritation.

*Sensitisation* Patch test: human Result: negative

(IUCLID)

Germ cell mutagenicity

## according to Regulation (EC) No. 1907/2006

Catalogue No.807051Product namePropylene carbonate for synthesis

*Genotoxicity in vitro* Ames test Result: negative

#### (IUCLID)

*Carcinogenicity* This information is not available.

Reproductive toxicity

This information is not available.

*Teratogenicity* This information is not available.

Specific target organ toxicity - single exposure This information is not available.

*Specific target organ toxicity - repeated exposure* This information is not available.

Aspiration hazard This information is not available.

#### 11.2 Further information

Systemic effects: Headache, Dizziness, Nausea, Stomach/intestinal disorders After long-term exposure to the chemical: Changes in the blood count Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

#### SECTION 12. Ecological information

#### 12.1 Toxicity

Toxicity to fish NOEC Leuciscus idus (Golden orfe): 2.200 mg/l; 96 h DIN 38412 (IUCLID)

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## according to Regulation (EC) No. 1907/2006

Catalogue No.807051Product namePropylene carbonate for synthesis

LC50 Leuciscus idus (Golden orfe): ca. 5.300 mg/l; 96 h DIN 38412 (IUCLID) Toxicity to daphnia and other aquatic invertebrates EC50 Daphnia magna (Water flea): > 1.000 mg/l; 48 h (IUCLID) Toxicity to algae IC50 Desmodesmus subspicatus (green algae): > 900 mg/l; 72 h (IUCLID) Toxicity to bacteria EC50 Pseudomonas putida: > 10.000 mg/l; 17 h DIN 38412 (IUCLID) 12.2 Persistence and degradability Biodegradability 94 %; 29 d OECD Test Guideline 301E Readily biodegradable 97 %; 4 d OECD Test Guideline 302B Readily eliminated from water 12.3 Bioaccumulative potential Partition coefficient: n-octanol/water log Pow: -0,48 (25 °C) (experimental)

(IUCLID) Bioaccumulation is not expected.

#### 12.4 Mobility in soil

No information available.

#### 12.5 Results of PBT and vPvB assessment

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

## according to Regulation (EC) No. 1907/2006

Catalogue No.807051Product namePropylene carbonate for synthesis

#### 12.6 Other adverse effects

Discharge into the environment must be avoided.

#### **SECTION 13. Disposal considerations**

#### Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

#### **SECTION 14. Transport information**

Land transport (ADR/RID)	
14.1 - 14.6	Not classified as dangerous in the meaning of transport regulations.
Inland waterway transport (ADN)	
Not relevant	
Air transport (IATA)	
14.1 - 14.6	Not classified as dangerous in the meaning of transport regulations.
Sea transport (IMDG)	
14.1 - 14.6	Not classified as dangerous in the meaning of transport regulations.
<b>14.7 Transport in bulk according</b> Not relevant	to Annex II of MARPOL 73/78 and the IBC Code

#### **SECTION 15. Regulatory information**

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

EU regulations	
Major Accident Hazard	SEVESO III
Legislation	Not applicable

# according to Regulation (EC) No. 1907/2006

	007054	
Catalogue No. 807051		
Product name	Propylene carbol	nate for synthesis
Occupational restrictions	Take note of Dir 94/3 work.	3/EC on the protection of young people at
Regulation (EC) No 1005/200 deplete the ozone layer	09 on substances that	not regulated
Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC		not regulated
Substances of very high cond	cern (SVHC)	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 $\geq$ 0.1 % (w/w).
National legislation		
Storage class	10 - 13	
15.2 Chemical safety assessme	t	
15.2 Chemical safety assessme		
For this product a chemical s	afety assessment was i	not carried out.
SECTION 16. Other information		
Full text of H-Statements refe	erred to under sections	2 and 3.
H319	Causes serious eye ir	ritation.
<b>Training advice</b> Provide adequate information, instruction and training for operators.		

## according to Regulation (EC) No. 1907/2006

Catalogue No.

Product name

807051 Propylene carbonate for synthesis

Labelling Hazard pictograms



*Signal word* Warning

*Hazard statements* H319 Causes serious eye irritation.

Precautionary statements Response P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

#### **Regional representation**

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

## according to Regulation (EC) No. 1907/2006

Catalogue No.

Product name

807051

Propylene carbonate for synthesis

## EXPOSURE SCENARIO 1 (Industrial use)

#### 1. Industrial use Chemical for synthesis, Cosmetic raw material)

#### Sectors of end-use

SU 3	Industrial uses: Uses of substances as such or in preparations at industrial sites
SU9	Manufacture of fine chemicals
SU 10	Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)

#### Chemical product category

PC19	Intermediate

- PC21 Laboratory chemicals
- PC39 Cosmetics, personal care products

#### **Process categories**

PROC1	Use in closed process, no likelihood of exposure	
PROC2	Use in closed, continuous process with occasional controlled exposure	
PROC3	Use in closed batch process (synthesis or formulation)	
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises	
PROC5	Mixing or blending in batch processes for formulation of preparations and articles	
	(multistage and/ or significant contact)	
PROC8a	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large	
	containers at non-dedicated facilities	
PROC8b	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large	
	containers at dedicated facilities	
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including	
	weighing)	
PROC10	Roller application or brushing	
PROC15	Use as laboratory reagent	
Environmental Release Categories		
ERC2	Formulation of preparations	
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles	
ERC6a	Industrial use resulting in manufacture of another substance (use of intermediates)	
ERC6b	Industrial use of reactive processing aids	

The Safety Data Sheets for catalogue items are available at www.merckgroup.com

## according to Regulation (EC) No. 1907/2006

Catalogue No.807051Product namePropylene carbonate for synthesis

*ERC7* Industrial use of substances in closed systems

2. Contributing scenarios: Operational conditions and risk management measures

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC15

#### **Product characteristics**

Concentration of the Substance in	Covers the percentage of the substance in the product up to
Mixture/Article	100 %.
Physical Form (at time of use)	Low volatile liquid
Process Temperature	< 98 °C
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#### Frequency and duration of use

Frequency of use	8 hours/day
Frequency of use	240 days/year

#### Other operational conditions affecting workers exposure

Indoor with local exhaust ventilation (LEV)

#### Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

#### 3. Exposure estimation and reference to its source

#### Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3

(Environmental Hazard Assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

## according to Regulation (EC) No. 1907/2006

Catalogue No.807051Product namePropylene carbonate for synthesis

#### Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.2	PROC1	longterm, dermal, systemic	0,0022	ECETOC TRA
		longterm, inhalative, local	0,0069	ECETOC TRA
2.2	PROC2	longterm, dermal, systemic	0,2127	ECETOC TRA
		longterm, inhalative, local	0,0274	ECETOC TRA
2.2	PROC3	longterm, dermal, systemic	0,0639	ECETOC TRA
		longterm, inhalative, local	0,0007	ECETOC TRA
2.2	PROC4	longterm, dermal, systemic	0,1064	ECETOC TRA
		longterm, inhalative, local	0,0137	ECETOC TRA
2.2	PROC5	longterm, dermal, systemic	0,1064	ECETOC TRA
		longterm, inhalative, local	0,0074	ECETOC TRA
2.2	PROC8a	longterm, dermal, systemic	0,2127	ECETOC TRA
		longterm, inhalative, local	0,0027	ECETOC TRA
2.2	PROC8b	longterm, dermal, systemic	0,0319	ECETOC TRA
		longterm, inhalative, local	0,0137	ECETOC TRA
2.2	PROC9	longterm, dermal, systemic	0,1064	ECETOC TRA
		longterm, inhalative, local	0,0137	ECETOC TRA
2.2	PROC10	longterm, dermal, systemic	0,2127	ECETOC TRA
		longterm, inhalative, local	0,0274	ECETOC TRA
2.2	PROC15	longterm, dermal, systemic	0,1064	ECETOC TRA
		longterm, inhalative, local	0,0007	ECETOC TRA

The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

according to Regulation (EC) No. 1907/2006

Catalogue No. Product name 807051 Propylene carbonate for synthesis

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

For scaling of worker exposure assessments performed with ECETOC TRA, please consult the Merck tool ScIDeEx® at www.merckmillipore.com/scideex.

## according to Regulation (EC) No. 1907/2006

Catalogue No.

807051

Product name

Propylene carbonate for synthesis

#### EXPOSURE SCENARIO 2 (Professional use)

1. Professional use Chemical for synthesis, Cosmetic raw material)

#### Sectors of end-use

*SU 22* Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Chemical product category

*PC21* Laboratory chemicals

PC39 Cosmetics, personal care products

#### **Process categories**

PROC15 Use as laboratory reagent

#### **Environmental Release Categories**

ERC2	Formulation of preparations
ERC6a	Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b	Industrial use of reactive processing aids
ERC7	Industrial use of substances in closed systems

#### 2. Contributing scenarios: Operational conditions and risk management measures

#### 2.2 Contributing scenario controlling worker exposure for: PROC15

#### Product characteristics

Concentration of the Substance in	Covers the percentage of the substance in the product up to
Mixture/Article	100 %.
Physical Form (at time of use)	Low volatile liquid
Process Temperature	< 98 °C

#### Frequency and duration of use

Frequency of use	8 hours/day
Frequency of use	240 days/year

## Other operational conditions affecting workers exposure

Outdoor / Indoor	Indoor with local exhaust ventilation (LEV)
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## according to Regulation (EC) No. 1907/2006

Catalogue No.807051Product namePropylene carbonate for synthesis

Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

## 3. Exposure estimation and reference to its source

## Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard Assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

#### Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.2	PROC15	longterm, dermal, systemic	0,2100	ECETOC TRA
		longterm, inhalative, local	0,0069	ECETOC TRA

The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

# 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

For scaling of worker exposure assessments performed with ECETOC TRA, please consult the Merck tool ScIDeEx® at www.merckmillipore.com/scideex.

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807051 Propylene carbonate for synthesis