acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH Version: **2.0 en**

Replaces version of: 2023-05-04

Version: (1)



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

Product identifier 1.1

Identification of the substance **Ethylene carbonate** ≥99 %, for synthesis

Article number 21LH

EC number 202-510-0 CAS number 96-49-1

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

Relevant identified uses: Laboratory and analytical use

Laboratory chemical

Uses advised against: Do not use for products which come into contact

with foodstuffs. Do not use for private purposes (household). Food, drink and animal feeding-

stuffs.

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co. KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

Telephone:+49 (0) 721 - 56 06 0 **Telefax:** +49 (0) 721 - 56 06 149 **e-mail:** sicherheit@carlroth.de Website: www.carlroth.de

sheet:

sicherheit@carlroth.de

e-mail (competent person):

1.4 **Emergency telephone number**

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Service City Hospital	Dudley Rd	B187QH Birmingham	844 892 0111	

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
3.10	Acute toxicity (oral)	4	Acute Tox. 4	H302
3.3	Serious eye damage/eye irritation	2	Eye Irrit. 2	H319
3.9	Specific target organ toxicity - repeated exposure	2	STOT RE 2	H373

United Kingdom (en) Page 1 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure.

2.2 **Label elements**

Labelling

Signal word Warning

Pictograms

GHS07, GHS08





Hazard statements

H302 Harmful if swallowed

H319 Causes serious eye irritation

H373 May cause damage to organs (kidney) through prolonged or repeated exposure

(if swallowed)

Precautionary statements

Precautionary statements - prevention

P280 Wear protective gloves/eye protection

Precautionary statements - response

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell

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

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0.1\%$.

SECTION 3: Composition/information on ingredients

3.1 **Substances**

Name of substance Ethylene carbonate

Molecular formula $C_3H_4O_3$

Molar mass 88,06 g/_{mol}

CAS No 96-49-1

EC No 202-510-0

United Kingdom (en) Page 2 / 15



acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH



Substance, Specific Conc. Limits, M-factors, ATE					
Specific Conc. Limits M-Factors ATE Exposure route					
-	-	>300 ^{mg} / _{kg}	oral		

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

Rinse mouth with water (only if the person is conscious). Call a doctor.

4.2 Most important symptoms and effects, both acute and delayed

Vomiting, Irritation

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings! water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Combustible.

Hazardous combustion products

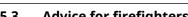
In case of fire may be liberated: Carbon monoxide (CO), Carbon dioxide (CO₂)

United Kingdom (en) Page 3 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH



In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Avoid contact with skin, eyes and clothes. Do not breathe dust.

6.2 **Environmental precautions**

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains. Take up mechanically.

Advice on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 **Precautions for safe handling**

Provision of sufficient ventilation. Avoid dust formation.

Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

Incompatible substances or mixtures

Observe hints for combined storage.

Protect against external exposure, such as

high temperatures

Consideration of other advice:

Ventilation requirements

Use local and general ventilation.

United Kingdom (en) Page 4 / 15

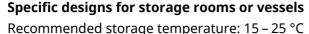


5.3 **Advice for firefighters**

acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH



7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 **Control parameters**

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Coun try	Name of agent	CAS No	Identifi- er	TWA [mg/ m³]	STEL [mg/ m³]	Ceil- ing-C [mg/ m³]	Nota- tion	Source
GB	dust		WEL	10			i	EH40/2005
GB	dust		WEL	4			r	EH40/2005

Notation

Ceiling value is a limit value above which exposure should not occur Inhalable fraction Ceiling-C

Respirable fraction

Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified) STEL

Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 TWA

hours time-weighted average (unless otherwise specified)

Human health values

Relevant DNELs and other threshold levels					
Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time	
DNEL	15 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects	
DNEL	4,3 mg/kg bw/ day	human, dermal	worker (industry)	chronic - systemic effects	

Environmental values

Relevant PNECs and other threshold levels End-**Threshold Organism Environmental com-Exposure time** point level partment 5,9 ^{mg}/_I **PNEC** aquatic organisms freshwater short-term (single instance) 0,59 mg/I **PNEC** aquatic organisms marine water short-term (single instance) 28,3 ^{mg}/_{kg} **PNEC** freshwater sediment aquatic organisms short-term (single instance) 2,83 mg/kg **PNEC** aquatic organisms marine sediment short-term (single instance) $2,2 \frac{mg}{kg}$ **PNEC** terrestrial organisms soil short-term (single instance)

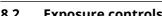
United Kingdom (en) Page 5 / 15



acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH



Individual protection measures (personal protective equipment)

Eye/face protection





Use safety goggle with side protection.

Skin protection





hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

type of material

NBR (Nitrile rubber)

material thickness

>0,11 mm

breakthrough times of the glove material

>480 minutes (permeation: level 6)

other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection





Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

Environmental exposure controls

Keep away from drains, surface and ground water.

United Kingdom (en) Page 6 / 15



8.2 **Exposure controls**

acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH



SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state solid

Colour colourless
Odour odourless
Melting point/freezing point 35 – 38 °C

Boiling point or initial boiling point and boiling 243 – 244 °C at 987 hPa

range

Flammability this material is combustible, but will not ignite

readily

Lower and upper explosion limit 3,6 vol% (LEL) - 16,1 vol% (UEL)

Flash point 143 °C (c.c.)
Auto-ignition temperature not determined
Decomposition temperature not relevant

pH (value) 5,5 – 7 (in aqueous solution: 88,1 ^g/_l, 25 °C)

Kinematic viscosity not relevant

Solubility(ies)

Water solubility 778 $^{9}/_{1}$ at 20 $^{\circ}$ C (ECHA)

Partition coefficient

Partition coefficient n-octanol/water (log value): 0,11 (20 °C) (ECHA)

Vapour pressure <1 hPa at 20 °C

Density and/or relative density

Density 1,321 $^{\rm g}/_{\rm cm^3}$ at 25 $^{\circ}{\rm C}$

Relative vapour density Information on this property is not available.

Particle characteristics No data available.

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics: There is no additional information.

United Kingdom (en) Page 7 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH



SECTION 10: Stability and reactivity

10.1 Reactivity

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

Harmful if swallowed.

GHS of the United Nations, annex 4. May be harmful in contact with skin.

Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
dermal	LD50	>2.000 ^{mg} / _{kg}	rat		ECHA

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

United Kingdom (en) Page 8 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH



Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

May cause damage to organs (kidney) through prolonged or repeated exposure (if swallowed).

Hazard category	Target organ	Exposure route
2	kidney	if swallowed

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

If swallowed

vomiting, nausea

If in eyes

Causes serious eye irritation

• If inhaled

Data are not available.

• If on skin

Data are not available.

Other information

none

11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0.1\%$.

11.3 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)					
Endpoint	Value	Species	Source	Exposure time	
LC50	>100 ^{mg} / _I	fish	ECHA	96 h	
ErC50	>100 ^{mg} / _I	algae	ECHA	72 h	

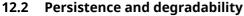
Aquatic toxicity (chronic)				
Endpoint	Value	Species	Source	Exposure time
EC50	>1.000 ^{mg} / _l	microorganisms	ECHA	30 min

United Kingdom (en) Page 9 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH



Theoretical Oxygen Demand: 0,9084 mg/mg Theoretical Carbon Dioxide: 1,499 mg/mg

Biodegradation

The substance is readily biodegradable.

Process of degradability

Process	Degradation rate	Time
carbon dioxide generation	86,9 %	29 d

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	0,11 (20 °C) (ECHA)

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of \geq 0,1%.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

13.2 Relevant provisions relating to waste

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

Properties of waste which render it hazardous

irritant - skin irritation and eye damage **HP 4**

HP 5 specific target organ toxicity (STOT)/aspiration toxicity

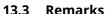
HP 6 acute toxicity

Page 10 / 15 United Kingdom (en)



acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis



Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number or ID number not subject to transport regulations

14.2 UN proper shipping name not assigned

14.3 Transport hazard class(es) none

14.4 Packing group not assigned

14.5 Environmental hazards non-environmentally hazardous acc. to the dan-

gerous goods regulations

14.6 Special precautions for user

There is no additional information.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

International Maritime Dangerous Goods Code (IMDG) - Additional information

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Not subject to ICAO-IATA.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Relevant provisions of the European Union (EU)

Seveso Directive

2012/	2012/18/EU (Seveso III)						
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes				
	not assigned						

Deco-Paint Directive

VOC content	100 %	
VOC content	1.321 ^g / _l	

Industrial Emissions Directive (IED)

United Kingdom (en) Page 11 / 15



article number: 21LH

acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH



VOC content	100 %
VOC content	1.321 ^g / _l

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Water Framework Directive (WFD)

not listed

Regulation on the marketing and use of explosives precursors

not listed

Regulation on drug precursors

not listed

Regulation on substances that deplete the ozone layer (ODS)

not listed

Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

Regulation on persistent organic pollutants (POP)

not listed

National regulations(GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list not listed

Restrictions according to GB REACH, Annex 17

not listed

Other information

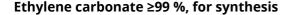
Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

National inventories

Country	Inventory	Status
AU	AIIC	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
NZ	NZIoC	substance is listed

United Kingdom (en) Page 12 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)



article number: 21LH



Country	Inventory	Status
PH	PICCS	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed (ACTIVE)
VN	NCI	substance is listed

Legend

Australian Inventory of Industrial Chemicals List of Existing and New Chemical Substances (CSCL-ENCS)

AIIC CSCL-ENCS DSL ECSI IECSC

CSCL-ENCS

DSL
Domestic Substances List (DSL)
ECSI
ECSI
ECSI
ECS ubstance Inventory (EINECS, ELINCS, NLP)
IECSC
Inventory of Existing Chemical Substances Produced or Imported in China
KECI
Korea Existing Chemicals Inventory
NCI
National Chemical Inventory
NZIOC
New Zealand Inventory of Chemicals
PICCS
PICCS
Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.
TCSI
Taiwan Chemical Substance Inventory
TSCA
Toxic Substance Control Act

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.3	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of ≥ 0,1%.	Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
15.1		National inventories: change in the listing (table)	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-li- cence/)

United Kingdom (en) Page 13 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH



Abbr.	Descriptions of used abbreviations
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
GB REACH	The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended)
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LEL	Lower explosion limit (LEL)
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regula- tions concerning the International carriage of Dangerous goods by Rail)
STEL	Short-term exposure limit
TWA	Time-weighted average
UEL	Upper explosion limit (UEL)
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H373	May cause damage to organs (kidney) through prolonged or repeated exposure (if swallowed).

United Kingdom (en) Page 14 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

Ethylene carbonate ≥99 %, for synthesis

article number: 21LH



Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

United Kingdom (en) Page 15 / 15