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

# Chloroacetic acid ≥99,5 %, p.a.

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Replaces version of: 2016-06-17

Version: (1)



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

#### **Product identifier** 1.1

Identification of the substance **Chloroacetic acid** ≥99,5 %, p.a.

Article number 9849

Registration number (REACH) It is not required to list the identified uses be-

cause the substance is not subject to registration

according to REACH (< 1 t/a).

Index number in CLP Annex VI 607-003-00-1 EC number 201-178-4 CAS number 79-11-8

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

Relevant identified uses: Laboratory chemical

Laboratory and analytical use

Uses advised against: Do not use for squirting or spraying. Do not use

for products which come into direct contact with the skin. Do not use for products which come into contact with foodstuffs. Do not use for private

purposes (household).

#### 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

Competent person responsible for the safety data :Department Health, Safety and Environment

sheet:

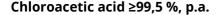
sicherheit@carlroth.de e-mail (competent person):

#### 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	

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# **SECTION 2: Hazards identification**

# 2.1 Classification of the substance or mixture

# Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
3.10	Acute toxicity (oral)	3	Acute Tox. 3	H301
3.1D	Acute toxicity (dermal)	3	Acute Tox. 3	H311
3.1I	Acute toxicity (inhal.)	3	Acute Tox. 3	H331
3.2	Skin corrosion/irritation	1B	Skin Corr. 1B	H314
3.8R	Specific target organ toxicity - single exposure (respirat- ory tract irritation)	3	STOT SE 3	H335
4.1A	Hazardous to the aquatic environment - acute hazard	1	Aquatic Acute 1	H400

For full text of abbreviations: see SECTION 16

# The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis. Spillage and fire water can cause pollution of watercourses.

# 2.2 Label elements

### Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word Danger

# **Pictograms**

GHS05, GHS06, GHS09



# **Hazard statements**

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled

H314 Causes severe skin burns and eye damage

H335 May cause respiratory irritation

H400 Very toxic to aquatic life

# **Precautionary statements**

# Precautionary statements - prevention

P261 Avoid breathing dust

P280 Wear protective gloves/eye protection

#### **Precautionary statements - response**

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin

with water [or shower]

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing

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#### Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Symbol(s)







H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

Causes severe skin burns and eye damage.

P261 Avoid breathing dust.

P280 Wear protective gloves/eye protection.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.

# SECTION 3: Composition/information on ingredients

### **Substances**

Name of substance Chloroacetic acid

Molecular formula C<sub>2</sub>H<sub>3</sub>ClO<sub>2</sub> 94,49 <sup>g</sup>/<sub>mol</sub> Molar mass

CAS No 79-11-8 EC No 201-178-4

Index No 607-003-00-1

Specific Conc. Limits	M-Factors	ATE	Exposure route
STOT SE 3; H335: C ≥ 5 %	M-factor (acute) = 10.0	90,4 <sup>mg</sup> / <sub>kg</sub> 305 <sup>mg</sup> / <sub>kg</sub> 0,5 <sup>mg</sup> / <sub>l</sub> /4h	oral dermal inhalation: dust/ mist

# **SECTION 4: First aid measures**

#### 4.1 **Description of first aid measures**



# **General notes**

Take off immediately all contaminated clothing. Self-protection of the first aider.

#### Following inhalation

Call a physician immediately. If breathing is irregular or stopped, administer artificial respiration.

#### Following skin contact

After contact with skin, wash immediately with plenty of water. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

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### Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye.

# **Following ingestion**

Rinse mouth immediately and drink plenty of water. Call a physician immediately. If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

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

Corrosion, Unconsciousness, Agitation, Risk of blindness, Gastric perforation, Vomiting, Spasms, Cough, Dyspnoea

# 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. 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 monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Hydrogen chloride (HCl)

# 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

# **SECTION 6: Accidental release measures**

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



### For non-emergency personnel

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Do not breathe dust.

# 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. The product is an acid. Before discharge into sewage plants the product normally needs to be neutralised.

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# 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. Ventilate affected area.

#### 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. Use extractor hood (laboratory). Handle and open container with care. Avoid dust formation. Clear contaminated areas thoroughly.

# Measures to protect the environment

Avoid release to the environment.

# Advice on general occupational hygiene

When using do not eat or drink. Thorough skin-cleansing after handling the product.

# 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

# **Incompatible substances or mixtures**

Observe hints for combined storage.

#### Consideration of other advice

Store locked up.

# **Ventilation requirements**

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.

# Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C

#### 7.3 Specific end use(s)

No information available.

# SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

National limit values

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# **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	monochloroacetic acid	79-11-8	WEL	1,2				EH40/2005

Notation

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

STEL

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)

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

### **Human health values**

Relevant DNE	Relevant DNELs and other threshold levels						
Endpoint Threshold level		Protection goal, route of exposure	Used in	Exposure time			
DNEL	8 mg/m³	human, inhalatory	worker (industry)	acute - systemic effects			
DNEL	0,07 mg/kg bw/ day	human, dermal	worker (industry)	chronic - systemic effects			
DNEL	4 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects			
DNEL	2 mg/m³	human, inhalatory	worker (industry)	chronic - local effects			
DNEL	5,7 mg/m³	human, inhalatory	worker (industry)	acute - local effects			

# **Environmental values**

#### Relevant PNECs and other threshold levels Threshold End-**Organism Exposure time Environmental com**point level partment 0,66 <sup>µg</sup>/<sub>I</sub> **PNEC** aquatic organisms water intermittent release **PNEC** $0.7 \,^{\mu g}/_{l}$ aquatic organisms freshwater short-term (single instance) **PNEC** $0.07 \, \mu g/I$ aquatic organisms marine water short-term (single instance) 1,6 <sup>mg</sup>/<sub>1</sub> **PNEC** aquatic organisms sewage treatment plant short-term (single instance) (STP) **PNEC** $2,57 \, ^{\mu g}/_{kg}$ aquatic organisms freshwater sediment short-term (single instance) **PNEC** $0,257 \, ^{\mu g}/_{kq}$ aquatic organisms marine sediment short-term (single instance) **PNEC** 0,006 mg/kg terrestrial organisms soil short-term (single instance)

#### 8.2 **Exposure controls**

Individual protection measures (personal protective equipment)

**Eye/face protection** 



Use safety goggle with side protection. Wear face protection.

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# Skin protection



### hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. 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). P3 (filters at least 99,95 % of airborne particles, colour code: White).

#### **Environmental exposure controls**

Keep away from drains, surface and ground water.

# SECTION 9: Physical and chemical properties

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

Physical state solid

Form crystalline

Colour white

Odour stinging

Melting point/freezing point 63 °C at 1.013 hPa (ECHA) 190 °C at 1.013 hPa (ECHA)

Boiling point or initial boiling point and boiling

range

**Flammability** this material is combustible, but will not ignite

readily

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Lower and upper explosion limit not determined

126 °C Flash point

Auto-ignition temperature not determined

Decomposition temperature not relevant

pH (value) <1 (in aqueous solution: 800 g/<sub>l</sub>, 20 °C)

Kinematic viscosity not relevant

Solubility(ies)

Water solubility  $>1.000 \, {}^{\rm g}/_{\rm l}$  at 20 °C (ECHA)

Partition coefficient

Partition coefficient n-octanol/water (log value): 0,49 (ECHA)

Vapour pressure 2,14 Pa at 20 °C

1,64 <sup>g</sup>/<sub>cm<sup>3</sup></sub> at 20 °C Density

Relative vapour density 3,26 at 20 °C (air = 1)

Particle characteristics no data available

Other safety parameters

Oxidising properties none

9.2 Other information

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

classes:

Other safety characteristics:

73,1 <sup>mN</sup>/<sub>m</sub> (20 °C) (ECHA) Surface tension

Temperature class (EU, acc. to ATEX)

Maximum permissible surface temperature on

the equipment: 450°C

# **SECTION 10: Stability and reactivity**

#### 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.

#### **Chemical stability**

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

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### 10.3 Possibility of hazardous reactions

Release of an acute toxic gas: Metals,

**Exothermic reaction with:** Reducing agents, strong oxidiser, Amines, Alkalis,

**Danger of explosion:** Hydrogen peroxide

#### 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 hazard classes as defined in Regulation (EC) No 1272/2008

# Classification according to GHS (1272/2008/EC, CLP)

# **Acute toxicity**

Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.

Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	90,4 <sup>mg</sup> / <sub>kg</sub>	rat		ECHA
inhalation: dust/ mist	LC50	>1.268 <sup>mg</sup> / <sub>m³</sub> /4h	rat		ECHA
dermal	LD50	305 <sup>mg</sup> / <sub>kg</sub>	rat		ECHA

### Skin corrosion/irritation

Causes severe skin burns and eye damage.

# Serious eye damage/eye irritation

Causes serious eye damage.

#### 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.

## Specific target organ toxicity - single exposure

May cause respiratory irritation.

# Specific target organ toxicity - repeated exposure

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

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# **Aspiration hazard**

Shall not be classified as presenting an aspiration hazard.

# Symptoms related to the physical, chemical and toxicological characteristics

#### If swallowed

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects)

# • If in eyes

causes burns, Causes serious eye damage, risk of blindness

#### If inhaled

Dyspnoea, Irritation to respiratory tract, cough

#### • If on skin

causes severe burns, causes poorly healing wounds

#### Other information

Cardiac arrhythmias, Spasms, Unconsciousness

# **SECTION 12: Ecological information**

### 12.1 Toxicity

Very toxic to aquatic life.

Aquatic toxicity (acute)					
Endpoint	Value	Species	Exposure time		
LC50	369 <sup>mg</sup> / <sub>l</sub>	fish	96 h		
EC50	74,2 <sup>mg</sup> / <sub>l</sub>	aquatic invertebrates	48 h		
ErC50	0.033 <sup>mg</sup> /ı	algae	72 h		

Aquatic toxicity (chronic)					
	Endpoint	Value	Species	Exposure time	
	LC50	57 <sup>mg</sup> / <sub>l</sub>	fish	35 d	

# **Biodegradation**

The substance is readily biodegradable. The relevant substances of the mixture are readily biodegradable.

### 12.2 Process of degradability

Theoretical Oxygen Demand with nitrification:  $0.5079 \, ^{mg}/_{mg}$  Theoretical Oxygen Demand without nitrification:  $0.5079 \, ^{mg}/_{mg}$ 

Theoretical Carbon Dioxide: 0,9315 mg/mg

Process of degradability				
Process	Degradation rate	Time		
DOC removal	>95 %	10 d		
oxygen depletion	69 %	28 d		

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#### 12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	0,49 (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

Not listed.

#### 12.7 Other adverse effects

Data are not available.

# **SECTION 13: Disposal considerations**

#### 13.1 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. Avoid release to the environment. Refer to special instructions/safety data sheets.

### Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

### 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. Waste catalogue ordinance (Germany).

### 13.3 Remarks

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.

# **SECTION 14: Transport information**

### 14.1 UN number or ID number

ADR/RID/ADN UN 1751
IMDG-Code UN 1751
ICAO-TI UN 1751

### 14.2 UN proper shipping name

ADR/RID/ADN CHLOROACETIC ACID, SOLID IMDG-Code CHLOROACETIC ACID, SOLID ICAO-TI Chloroacetic acid, solid

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14.3	Trans	port	hazard	class(	es)
------	-------	------	--------	--------	-----

ADR/RID/ADN 6.1 (8)
IMDG-Code 6.1 (8)
ICAO-TI 6.1 (8)

14.4 Packing group

ADR/RID/ADN II
IMDG-Code II
ICAO-TI II

**14.5 Environmental hazards** hazardous to the aquatic environment

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

# Information for each of the UN Model Regulations

# Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information

Classification code TC2

Danger label(s) 6.1+8, "Fish and tree"

Environmental hazards yes (hazardous to the aquatic environment)

Special provisions (SP) 802(ADN)

Excepted quantities (EQ) E4

Limited quantities (LQ) 500 g

Transport category (TC) 2

Tunnel restriction code (TRC) D/E

Hazard identification No 68

International Maritime Dangerous Goods Code (IMDG) - Additional information

Marine pollutant yes (hazardous to the aquatic environment)

2X

Danger label(s) 6.1+8, "Fish and tree"

**Emergency Action Code** 

Excepted quantities (EQ) E4
Limited quantities (LQ) 500 g
EmS F-A, S-B

Stowage category C

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**Segregation group** 

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1 - Acids

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

**Environmental hazards YES** (hazardous to the aquatic environment)

Danger label(s) 6.1 + 8

Excepted quantities (EQ) E4

Limited quantities (LQ) 1 kg

# 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)

Restrictions according to REACH, Annex XVII

not listed

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

#### **Seveso Directive**

2012/18/EU (Seveso III)				
No	Dangerous substance/hazard categories	plication of lower	(tonnes) for the ap- and upper-tier re- ments	Notes
H2	acute toxic (cat. 2 + cat. 3, inhal.)	50	200	41)

# **Notation**

- Category 2, all exposure routes - category 3, inhalation exposure route

### **Deco-Paint Directive (2004/42/EC)**

VOC content	100 % 1.640 <sup>g</sup> / <sub>I</sub>
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# Directive on industrial emissions (VOCs, 2010/75/EU)

VOC content	0 %
VOC content	0 <sup>g</sup> / <sub>l</sub>

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II

not listed

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

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### **Water Framework Directive (WFD)**

List of pollutants (WFD)

Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
Chloroacetic acid	Organohalogen compounds and substances which may form such compounds in the aquatic envir- onment		A)	

Legend

Indicative list of the main pollutants A)

# Regulation 98/2013/EU on the marketing and use of explosives precursors

not listed

Regulation 111/2005/EC laying down rules for the monitoring of trade between the Community and third countries in drug precursors

not listed

Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)

not listed

Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)

not listed

#### **National inventories**

Country	Inventory	Status
AU	AICS	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
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed

Legend

AICS CICR CSCL-ENCS DSL ECSI IECSC

Australian Inventory of Chemical Substances Chemical Inventory and Control Regulation List of Existing and New Chemical Substances (CSCL-ENCS)

CSCL-ENCS
DSL Domestic Substances List (DSL)
ECSI EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC Inventory of Existing Chemical Substances Produced or Imported in China INSQ National Inventory of Chemical Substances
KECI Korea Existing Chemicals Inventory
NZIOC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg. REACH registered substances
TCSI Taiwan Chemical Substance Inventory

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Legend

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)

Alignment to regulation: Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU

Restructuring: section 9, section 14

# **Abbreviations and acronyms**

Abbr.	Descriptions of used abbreviations	
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de naviga- tion intérieures (European Agreement concerning the International Carriage of Dangerous Goods by In- land Waterways)	
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)	
ADR/RID/ADN	European Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways (ADR/RID/ADN)	
ATE	Acute Toxicity Estimate	
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)	
Ceiling-C	Ceiling value	
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures	
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)	
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-li- cence/)	
EINECS	European Inventory of Existing Commercial Chemical Substances	
ELINCS	European List of Notified Chemical Substances	
EmS	Emergency Schedule	
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	
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	
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air	
IMDG	International Maritime Dangerous Goods Code	

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



article number: 9849



Abbr.	Descriptions of used abbreviations	
IMDG-Code	-Code International Maritime Dangerous Goods Code	
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008	
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	
M-factor	Means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present	
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	
SVHC	Substance of Very High Concern	
TWA	Time-weighted average	
VOC	Volatile Organic Compounds	
vPvB	Very Persistent and very Bioaccumulative	
WEL	Workplace exposure limit	

# Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). 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 chapter 2 and 3)

Code	Text
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.

### **Disclaimer**

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

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