

# Safety data sheet

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



## Ammonium thiocyanate ≥99 %, p.a., ACS, ISO

article number: **4477**  
Version: **2.0 en**  
Replaces version of: 2016-04-29  
Version: (1)

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Revision: 2021-12-03

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

### 1.1 Product identifier

Identification of the substance	<b>Ammonium thiocyanate</b> ≥99 %, p.a., ACS, ISO
Article number	4477
Registration number (REACH)	01-2119543696-28-XXXX
Index number in CLP Annex VI	615-004-00-3
EC number	217-175-6
CAS number	1762-95-4

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

Relevant identified uses:	Laboratory chemical Laboratory and analytical use
Uses advised against:	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 sheet: :Department Health, Safety and Environment

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

### 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

# Safety data sheet

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



## Ammonium thiocyanate ≥99 %, p.a., ACS, ISO

article number: 4477

### 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)	4	Acute Tox. 4	H302
3.1D	Acute toxicity (dermal)	4	Acute Tox. 4	H312
3.1I	Acute toxicity (inhal.)	4	Acute Tox. 4	H332
4.1C	Hazardous to the aquatic environment - chronic hazard	3	Aquatic Chronic 3	H412

### Supplemental hazard information

Code	Supplemental hazard information
EUH032	contact with acids liberates very toxic gas

For full text of abbreviations: see SECTION 16

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

Spillage and fire water can cause pollution of watercourses.

## 2.2 Label elements

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

#### Signal word

**Warning**

#### Pictograms

GHS07



#### Hazard statements

H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled  
H412 Harmful to aquatic life with long lasting effects

#### Precautionary statements

##### Precautionary statements - prevention

P261 Avoid breathing dust  
P273 Avoid release to the environment  
P280 Wear protective gloves/protective clothing/eye protection/face protection

##### Precautionary statements - response

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell  
P302+P352 IF ON SKIN: Wash with plenty of water/...  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing

#### Supplemental hazard information

EUH032 Contact with acids liberates very toxic gas.

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

Signal word: **Warning**

# Safety data sheet

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



## Ammonium thiocyanate $\geq 99\%$ , p.a., ACS, ISO

article number: 4477

Symbol(s)



H412 Harmful to aquatic life with long lasting effects.

EUH032 Contact with acids liberates very toxic gas.

### 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

### 3.1 Substances

Name of substance	Ammonium thiocyanate
Molecular formula	CH <sub>4</sub> N <sub>2</sub> S
Molar mass	76,12 g/mol
REACH Reg. No	01-2119543696-28-XXXX
CAS No	1762-95-4
EC No	217-175-6
Index No	615-004-00-3

#### Substance, Specific Conc. Limits, M-factors, ATE

Specific Conc. Limits	M-Factors	ATE	Exposure route
-	-	750 mg/kg 1.100 mg/kg 1,5 mg/l/4h	oral dermal inhalation: dust/ mist

## 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

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

# Safety data sheet

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



**Ammonium thiocyanate  $\geq 99\%$ , p.a., ACS, ISO**

article number: **4477**

## 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

## 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

Non-combustible.

#### Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Sulphur oxides (SO<sub>x</sub>), Hydrogen cyanide (HCN, prussic acid)

### 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.

## 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. 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.

# Safety data sheet

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



## Ammonium thiocyanate $\geq 99\%$ , p.a., ACS, ISO

article number: 4477

### 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

Avoid dust formation.

### 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.

### Consideration of other advice:

### 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

#### Occupational exposure limit values (Workplace Exposure Limits)

This information is not available.

#### Human health values

Relevant DNELs and other threshold levels				
Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	2,8 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	4 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

# Safety data sheet

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



## Ammonium thiocyanate $\geq 99\%$ , p.a., ACS, ISO

article number: 4477

### Environmental values

Relevant PNECs and other threshold levels				
End-point	Threshold level	Organism	Environmental compartment	Exposure time
PNEC	0,027 mg/l	aquatic organisms	water	intermittent release
PNEC	0,095 mg/l	aquatic organisms	freshwater	short-term (single instance)
PNEC	0,009 mg/l	aquatic organisms	marine water	short-term (single instance)
PNEC	30 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
PNEC	0,543 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	0,054 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
PNEC	6,336 mg/kg	terrestrial organisms	soil	short-term (single instance)

## 8.2 Exposure controls

### Individual protection measures (personal protective equipment)

#### Eye/face protection



Use safety goggles 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

# Safety data sheet

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



## Ammonium thiocyanate $\geq 99\%$ , p.a., ACS, ISO

article number: 4477

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.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	solid
Form	crystalline
Colour	white
Odour	odourless
Melting point/freezing point	151 °C at 1.013 hPa (ECHA)
Boiling point or initial boiling point and boiling range	not determined
Flammability	non-combustible
Lower and upper explosion limit	not determined
Flash point	not applicable
Auto-ignition temperature	not determined
Decomposition temperature	>190 °C (ECHA)
pH (value)	4,8 (in aqueous solution: 1.070 g/l, 20,1 °C) (ECHA)
Kinematic viscosity	not relevant
<u>Solubility(ies)</u>	
Water solubility	~1.600 g/l at 20 °C
<u>Partition coefficient</u>	
Partition coefficient n-octanol/water (log value):	-2,29 (ECHA) not relevant (inorganic)
Vapour pressure	not determined
<u>Density and/or relative density</u>	
Density	1,31 g/cm <sup>3</sup> at 20 °C
Relative vapour density	information on this property is not available
Bulk density	~650 kg/m <sup>3</sup>

# Safety data sheet

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



## Ammonium thiocyanate $\geq 99\%$ , p.a., ACS, ISO

article number: 4477

Particle characteristics No data available.

### Other safety parameters

Oxidising properties none

## 9.2 Other information

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

Other safety characteristics: There is no additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

### 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

Keep away from heat. Decomposition takes place from temperatures above:  $>190\text{ }^{\circ}\text{C}$ .

### 10.5 Incompatible materials

There is no additional information.

### Release of toxic materials with

Acids.

### 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

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

Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	750 mg/kg	rat		TOXNET
dermal	LD50	$>2.000\text{ mg/kg}$	rat		ECHA

#### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.



# Safety data sheet

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



## Ammonium thiocyanate $\geq 99\%$ , p.a., ACS, ISO

article number: 4477

### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

### 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

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

### Specific target organ toxicity - repeated exposure

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

### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

### Symptoms related to the physical, chemical and toxicological characteristics

#### • If swallowed

nausea, gastrointestinal complaints

#### • If in eyes

Irritating to eyes

#### • If inhaled

Data are not available.

#### • If on skin

Data are not available.

#### • Other information

none

### 11.2 Endocrine disrupting properties

Not listed.

### 11.3 Information on other hazards

There is no additional information.

## SECTION 12: Ecological information

### 12.1 Toxicity

Harmful to aquatic life with long lasting effects.

# Safety data sheet

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



## Ammonium thiocyanate ≥99 %, p.a., ACS, ISO

article number: 4477

Aquatic toxicity (acute)				
Endpoint	Value	Species	Source	Exposure time
LC50	65 mg/l	fish	ECHA	96 h
EC50	3,56 mg/l	aquatic invertebrates	ECHA	48 h

Aquatic toxicity (chronic)				
Endpoint	Value	Species	Source	Exposure time
LC50	>100 mg/l	fish	ECHA	24 h
EC50	2,6 mg/l	aquatic invertebrates	ECHA	21 d

### Biodegradation

The substance is readily biodegradable. The methods for determining the biological degradability are not applicable to inorganic substances.

### 12.2 Process of degradability

Theoretical Oxygen Demand with nitrification: 1,734 mg/mg  
Theoretical Oxygen Demand: 0,8407 mg/mg  
Theoretical Carbon Dioxide: 0,5782 mg/mg

Process of degradability		
Process	Degradation rate	Time
DOC removal	80 %	28 d

### 12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	-2,29 (ECHA)
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### 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.

# Safety data sheet

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



**Ammonium thiocyanate  $\geq 99\%$ , p.a., ACS, ISO**

article number: **4477**

## 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.

### 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

- |  |   |
|--|---|
| <b>14.1 UN number or ID number</b>   | not subject to transport regulations                                  |
| <b>14.2 UN proper shipping name</b>  | not assigned  |
| <b>14.3 Transport hazard class(es)</b>   | none  |
| <b>14.4 Packing group</b>  | not assigned  |
| <b>14.5 Environmental hazards</b>  | non-environmentally hazardous acc. to the dangerous goods regulations |
| <b>14.6 Special precautions for user</b>   | There is no additional information.                                   |
| <b>14.7 Maritime transport in bulk according to IMO instruments</b>  | The cargo is not intended to be carried in bulk.                      |
| <b>14.8 <u>Information for each of the UN Model Regulations</u></b>  |   |
| <b>Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information</b> | Not subject to ADR, RID and ADN.                                      |
| <b>International Maritime Dangerous Goods Code (IMDG) - Additional information</b>                           | Not subject to IMDG.  |
| <b>International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information</b>                    | Not subject to ICAO-IATA.   |

# Safety data sheet

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



Ammonium thiocyanate ≥99 %, p.a., ACS, ISO

article number: 4477

## 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	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
	not assigned		

##### Deco-Paint Directive

VOC content	0 % , 0 g/l
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##### Industrial Emissions Directive (IED)

VOC content	0 %
VOC content	0 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)

List of pollutants (WFD)				
Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
Ammonium thiocyanate	Substances which contribute to eutrophication (in particular, nitrates and phosphates)		A)	
Ammonium thiocyanate	Cyanides		A)	

##### Legend

A) Indicative list of the main pollutants

##### Regulation on the marketing and use of explosives precursors

not listed

##### Regulation on drug precursors

not listed

# Safety data sheet

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



## Ammonium thiocyanate ≥99 %, p.a., ACS, ISO

article number: 4477

### 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

### 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	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
TW	TCSI	substance is listed
US	TSCA	substance is listed

#### Legend

AICS	Australian Inventory of Chemical Substances
CSCL-ENCS	List of Existing and New Chemical Substances (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
TSCA	Toxic Substance Control Act

## 15.2 Chemical Safety Assessment

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

# Safety data sheet

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



## Ammonium thiocyanate ≥99 %, p.a., ACS, ISO

article number: 4477

### 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

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.1		Classification according to Regulation (EC) No 1272/2008 (CLP): change in the listing (table)	yes
2.1		Supplemental hazard information: change in the listing (table)	yes
2.1	Remarks: For full text of Hazard- and EU Hazard-statements: see SECTION 16.		yes
2.1		The most important adverse physicochemical, human health and environmental effects: Spillage and fire water can cause pollution of watercourses.	yes
2.2		Pictograms: change in the listing (table)	yes
2.2		Precautionary statements - prevention: change in the listing (table)	yes
2.2		Precautionary statements - response: change in the listing (table)	yes
2.3	Other hazards: There is no additional information.	Other hazards	yes
2.3		Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB.	yes

#### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
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)
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)

# Safety data sheet

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



## Ammonium thiocyanate ≥99 %, p.a., ACS, ISO

article number: 4477

Abbr.	Descriptions of used abbreviations
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
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
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
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 (Regulations concerning the International carriage of Dangerous goods by Rail)
SVHC	Substance of Very High Concern
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

### 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 section 2 and 3)

Code	Text
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H412	Harmful to aquatic life with long lasting effects.

### Disclaimer

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