according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



### Nickel(II) sulfate hexahydrate ≥98 %, extra pure

article number: 7322 date of compilation: 2016-04-05 Version: 2.0 en Revision: 2017-01-27

Replaces version of: 2016-04-05

Version: (1.0)

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

#### **Product identifier** 1.1

Identification of the substance Nickel(II) sulfate hexahydrate

Article number 7322

Registration number (REACH) 01-2119439361-44-xxxx

Index No 028-009-00-5 EC number 232-104-9 CAS number 10101-97-0

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

**Identified uses:** laboratory chemical

#### 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

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

1.4 **Emergency telephone number** 

> **Emergency information service** Poison Centre Munich: +49/(0)89 19240

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

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

## Classification acc. to GHS

Section	Hazard class	Hazard class and cat- egory	Hazard state- ment
3.10	acute toxicity (oral)	(Acute Tox. 4)	H302
3.1I	acute toxicity (inhal.)	(Acute Tox. 4)	H332
3.2	skin corrosion/irritation	(Skin Irrit. 2)	H315
3.4R	respiratory sensitisation	(Resp. Sens. 1)	H334
3.45	skin sensitisation	(Skin Sens. 1)	H317

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### Classification acc. to GHS

Section	Hazard class	Hazard class and cat- egory	Hazard state- ment
3.5	germ cell mutagenicity	(Muta. 2)	H341
3.6	carcinogenicity	(Carc. 1A)	H350i
3.7	reproductive toxicity	(Repr. 1B)	H360D
3.9	specific target organ toxicity - repeated exposure	(STOT RE 1)	H372
4.1A	hazardous to the aquatic environment - acute hazard	(Aquatic Acute 1)	H400
4.1C	hazardous to the aquatic environment - chronic hazard	(Aquatic Chronic 1)	H410

#### Remarks

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

#### 2.2 Label elements

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

### Signal word Danger

### **Pictograms**







### **Hazard statements**

H302+H332 Harmful if swallowed or if inhaled.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H341 Suspected of causing genetic defects.
H350i May cause cancer by inhalation.
H360D May damage the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

### **Precautionary statements**

### **Precautionary statements - prevention**

P260 Do not breathe dust.

P273 Avoid release to the environment. P280 Wear protective gloves/eye protection.

### **Precautionary statements - response**

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P302+P352 IF ON SKIN: Wash with plenty of soap and water.

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

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

### For professional users only

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

Signal word: Danger

Symbol(s)







H317 May cause an allergic skin reaction.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341 Suspected of causing genetic defects.

H341 Suspected of causing genetic defects. H350i May cause cancer by inhalation. H360D May damage the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

P260 Do not breathe dust.

P280 Wear protective gloves/eye protection.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

#### 2.3 Other hazards

There is no additional information.

## **SECTION 3: Composition/information on ingredients**

#### 3.1 Substances

Name of substance Nickel(II) sulfate hexahydrate

Index No 028-009-00-5

Registration number (REACH) 01-2119439361-44-xxxx

EC number 232-104-9 CAS number 10101-97-0 Molecular formula NiSO<sub>4</sub> \*  $6H_2O$ 

Molar mass 262,9 g/<sub>mol</sub>

### **SECTION 4: First aid measures**

### 4.1 Description of first aid measures



### **General notes**

Take off contaminated clothing.

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### Following inhalation

Remove person to fresh air and keep comfortable for breathing. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

#### **Following skin contact**

Rinse skin with water/shower. In case of skin irritation, consult a physician.

### Following eye contact

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

#### Following ingestion

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

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

Irritation, Allergic reactions, Asthmatic complaints, Breathing difficulties, Gastrointestinal complaints

## 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 fire-fighting measures to the fire surroundings water spray, foam, dry extinguishing powder, carbon dioxide (CO2)

### 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: sulphur oxides (SOx), in case of fire and/or explosion do not breathe fumes

### 5.3 Advice for firefighters

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

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

#### 6.2 Environmental precautions

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

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

### Advices on how to contain a spill

Covering of drains.

### Advices 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**

Use extractor hood (laboratory). Avoid exposure.

### Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

### Advice on general occupational hygiene

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

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

Keep container tightly closed. Store in a dry place.

### **Incompatible substances or mixtures**

Observe hints for combined storage.

#### Consideration of other advice

### Ventilation requirements

Use local and general ventilation.

### • 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)

Coun- try	Name of agent	Notation	Identifier	TWA [mg/m³]	STEL [mg/m³]	Source
GB	dust	i	WEL	10		EH40/2005
GB	dust	r	WEL	4		EH40/2005

#### **Notation**

Inhalable fraction Respirable fraction

**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 **TWA** 

hours time-weighted average

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#### Relevant DNELs/DMELs/PNECs and other threshold levels

#### human health values

Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	0,7 mg/m³	human, inhalatory	worker (industry)	acute - local effects
DNEL	16 mg/m³	human, inhalatory	worker (industry)	acute - systemic effects
DNEL	0,05 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - local effects
DNEL	0,05 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects

### 8.2 Exposure controls

### 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.

### 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).

Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

### **Environmental exposure controls**

Keep away from drains, surface and ground water.

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## **SECTION 9: Physical and chemical properties**

### 9.1 Information on basic physical and chemical properties

**Appearance** 

Physical state solid (crystals)
Colour greenish-blue
Odour odourless

Odour threshold No data available

Other physical and chemical parameters

pH (value) 4,3 - 4,7 (100 <sup>g</sup>/<sub>l</sub>, 20 °C)

Melting point/freezing point not determined

Initial boiling point and boiling range This information is not available.

Flash point not applicable

Evaporation rate no data available

Flammability (solid, gas) Non-flammable

**Explosive limits** 

lower explosion limit (LEL)
 upper explosion limit (UEL)
 this information is not available
 Explosion limits of dust clouds
 these information are not available
 Vapour pressure
 This information is not available.

Density  $2,07 \, \mathrm{g/_{cm^3}}$  at 20 °C

Vapour density This information is not available.

Bulk density  $\sim 1.000 \, \text{kg/m}^3$ 

Relative density Information on this property is not available.

Solubility(ies)

Water solubility  $\sim 650 \, ^{\rm g}/_{\rm l}$  at 20  $^{\circ}{\rm C}$ 

Partition coefficient

n-octanol/water (log KOW)

This information is not available.

Auto-ignition temperature Information on this property is not available.

Decomposition temperature no data available

Viscosity not relevant (solid matter)

Explosive properties Shall not be classified as explosive

Oxidising properties none

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#### 9.2 Other information

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 acid

#### 10.4 Conditions to avoid

Keep away from heat.

#### 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

#### **Acute toxicity**

Exposure route	Endpoint	Value	Species	Method
oral	LD50	361 <sup>mg</sup> / <sub>kg</sub>	rat	OECD-425

#### Skin corrosion/irritation

Causes skin irritation.

### Serious eye damage/eye irritation

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

### Respiratory or skin sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause sensitization by skin contact. May cause sensitization by inhalation.

### Summary of evaluation of the CMR properties

### Germ cell mutagenicity:

Suspected of causing genetic defects

### **Carcinogenicity:**

May cause cancer by inhalation

### Reproductive toxicity:

May damage the unborn child

### Specific target organ toxicity - single exposure

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

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### • Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

### **Aspiration hazard**

Shall not be classified as presenting an aspiration hazard.

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

### If swallowed

gastrointestinal complaints

#### • If in eyes

causes slight to moderate irritation

### • If inhaled

irritant effects, cough, a respiratory sensitiser, asthmatic complaints, breathing difficulties

#### • If on skin

causes skin irritation, a skin sensitiser

#### Other information

None

## **SECTION 12: Ecological information**

### 12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

### Aquatic toxicity (acute)

Very toxic to aquatic organisms.

Endpoint	Value	Species	Method	Source	Notes	Expos- ure time
EC50	1 <sup>mg</sup> / <sub>l</sub>	daphnia magna	OECD-202		anhydr.	48 h
EC50	0,75 <sup>mg</sup> / <sub>l</sub>	Pseudokirchner- iella subcapitata	OECD-201		anhydr.	72 h
LC50	1,28 <sup>mg</sup> / <sub>l</sub>	rainbow trout (Oncorhynchus mykiss)		ECOTOX Data- base	anhydr.	96 h

### **Aquatic toxicity (chronic)**

May cause long-term adverse effects in the aquatic environment.

### 12.2 Process of degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

### 12.3 Bioaccumulative potential

Data are not available.

### 12.4 Mobility in soil

Data are not available.

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#### 12.5 Results of PBT and vPvB assessment

Data are not available.

#### 12.6 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.

#### 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	3077
14.2	UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID. N.O.S.

Hazardous ingredients Nickel(II) sulfate hexahydrate

**14.3** Transport hazard class(es)

Class 9 (miscellaneous dangerous substances and articles) (envir-

onmentally hazardous)

**14.4** Packing group III (substance presenting low danger)

**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 Transport in bulk according to Annex II of MARPOL and the IBC Code

The cargo is not intended to be carried in bulk.

### 14.8 Information for each of the UN Model Regulations

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

UN number 3077

Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE,

SOLID, N.O.S.

Particulars in the transport document UN3077, ENVIRONMENTALLY HAZARDOUS SUB-

STANCE, SOLID, N.O.S., (Nickel(II) sulfate hexahy-

drate), 9, III, (-)

Class

Classification code M7

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Packing group III

9 + "fish and tree" Danger label(s)



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

274, 335, 375, 601 Special provisions (SP)

Excepted quantities (EQ) E1 5 kg Limited quantities (LQ) Transport category (TC) 3 Tunnel restriction code (TRC) Hazard identification No 90 **Emergency Action Code** 27

### • International Maritime Dangerous Goods Code (IMDG)

**UN** number 3077

Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE,

SOLID, N.O.S.

UN3077, ENVIRONMENTALLY HAZARDOUS SUB-Particulars in the shipper's declaration

STANCE, SOLID, N.O.S., (Nickel(II) sulfate hexahydrate), 9, III

Class

Marine pollutant yes (hazardous to the aquatic environment)

Packing group III

Danger label(s) 9 + "fish and tree"



Special provisions (SP) 274, 335, 966, 967, 969

Excepted quantities (EQ) E1 Limited quantities (LQ) 5 kg F-A, S-F **EmS** Stowage category Α

### • International Civil Aviation Organization (ICAO-IATA/DGR)

**UN** number 3077

Proper shipping name Environmentally hazardous substance, solid,

n.o.s.

Particulars in the shipper's declaration UN3077, Environmentally hazardous substance,

solid, n.o.s., (Nickel(II) sulfate hexahydrate), 9, III

9 Class

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Environmental hazards yes (hazardous to the aquatic environment)

Packing group III

9 + "fish and tree"



Special provisions (SP) A97, A158, A179, A197, 274

Excepted quantities (EQ) E1
Limited quantities (LQ) 30 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)
  - Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC) Not listed.
  - Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS) Not listed.
  - Regulation 850/2004/EC on persistent organic pollutants (POP) Not listed.
  - List of substances subject to authorisation (REACH, Annex XIV) not listed
  - Seveso Directive

2012/18/EU (Seveso III)				
No	Dangerous substance/hazard categories	Qualifying quantity ( plication of lower a quirem		Notes
E1	environmental hazards (hazardous to the aquatic environment, cat. 1)	100	200	56)

### Notation

56) Hazardous to the Aquatic Environment in category Acute 1 or Chronic 1

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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# Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

not listed

#### **National inventories**

Substance is listed in the following national inventories:

- EINECS/ELINCS/NLP (Europe)
- REACH (Europe)

### 15.2 Chemical Safety Assessment

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

## **SECTION 16: Other information**

### 16.1 Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)
2.2		Hazard statements: change in the listing (table)
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)
14.8	Particulars in the transport document: UN3077, ENVIRONMENTALLY HAZARDOUS SUB- STANCE, SOLID, N.O.S., (nickel sulfate), 9, III, (E)	Particulars in the transport document: UN3077, ENVIRONMENTALLY HAZARDOUS SUB- STANCE, SOLID, N.O.S., (Nickel(II) sulfate hexahy- drate), 9, III, (-)
14.8	Tunnel restriction code (TRC):	Tunnel restriction code (TRC):
14.8	Particulars in the shipper's declaration: UN3077, ENVIRONMENTALLY HAZARDOUS SUB- STANCE, SOLID, N.O.S., (nickel sulfate), 9, III	Particulars in the shipper's declaration: UN3077, ENVIRONMENTALLY HAZARDOUS SUB- STANCE, SOLID, N.O.S., (Nickel(II) sulfate hexahy- drate), 9, III
14.8		• International Civil Aviation Organization (ICAO-IATA/DGR)
14.8		UN number: 3077
14.8		Proper shipping name: Environmentally hazardous substance, solid, n.o.s.
14.8		Particulars in the shipper's declaration: UN3077, Environmentally hazardous substance, solid, n.o.s., (Nickel(II) sulfate hexahydrate), 9, III
14.8		Class: 9
14.8		Environmental hazards: yes (hazardous to the aquatic environment)
14.8		Packing group: III9 + "fish and tree"
14.8		Packing group: change in the listing (table)
14.8		Special provisions (SP): A97, A158, A179, A197, 274
14.8		Excepted quantities (EQ): E1
14.8		Limited quantities (LQ): 30 kg

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### **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 européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
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
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
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
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
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)
STEL	short-term exposure limit
TWA	time-weighted average
vPvB	very Persistent and very Bioaccumulative
WEL	workplace exposure limit

### Key literature references and sources for data

Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU Regulation (EC) No. 1272/2008 (CLP, EU GHS)

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

Code	Text
H302	harmful if swallowed
H315	causes skin irritation
H317	may cause an allergic skin reaction
H332	harmful if inhaled
H334	may cause allergy or asthma symptoms or breathing difficulties if inhaled
H341	suspected of causing genetic defects
H350i	may cause cancer by inhalation
H360D	may damage the unborn child
H372	causes damage to organs through prolonged or repeated exposure
H400	very toxic to aquatic life
H410	very toxic to aquatic life with long lasting effects

### Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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