

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

## SODIUM HYDROGENSULPHIDE 20-48 %

Version 1

Revision Date 23.08.2016

Print Date 02.05.2017

GB / EN

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1 Product identifier

Trade name : SODIUM HYDROGENSULPHIDE 20-48 %

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

Use of the Substance/Mixture : Specific use(s): Industrial use  
Water treatment chemical  
Waste treatment  
Manufacture of paper

#### 1.3 Details of the supplier of the safety data sheet

Company : Carbosulf Chemische Werke GmbH  
Geestemünder Str.26  
DE 50735 Köln  
Germany

Telephone : +4922174960

Telefax : +492217496190

E-mail address : RegulatoryAffairs@akzonobel.com

#### 1.4 Emergency telephone number

Emergency telephone number : 24 hours:+31 57 06 79211, CHEMTREC-USA:1-800-424-9300, CHEMTREC outside USA +1-703-527-3887, CANUTEC-CANADA:1-613-996-6666,  
化学事故应急咨询电话：国家化学事故应急响应中心 +86 532 8388 9090

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, 1, H290

Acute toxicity, 3, H301

Skin corrosion, 1B, H314

Serious eye damage, 1, H318

Acute aquatic toxicity, 1, H400

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

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## 2.2 Label elements

### Labelling (REGULATION (EC) No 1272/2008)

Pictogram

:



Signal word

: Danger

Hazard statements

: H290  
H301  
H314

May be corrosive to metals.  
Toxic if swallowed.  
Causes severe skin burns and eye damage.  
Very toxic to aquatic life.

H400

Precautionary statements

: **Prevention:**

P273  
P280

Avoid release to the environment.  
Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P310 + P330

IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.

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/shower.

P305 + P351 + P338 + P310

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

### Hazardous components which must be listed on the label:

Sodium hydrogensulphide

16721-80-5

### Additional Labelling:

EUH031 Contact with acids liberates toxic gas.

EUH071 Corrosive to the respiratory tract.

## 2.3 Other hazards

Contact with acids liberates toxic gas.

PBT and vPvB assessment

: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

#### Hazardous substance

Chemical name	PBT vPvB OEL	CAS-No. EC-No. REACH No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
Sodium hydrogensulphide		16721-80-5 240-778-0 01-2119513719-34	Met. Corr. 1; H290 Acute Tox. 3; H301 Skin Corr. 1B; H314 Eye Dam. 1; H318 Aquatic Acute 1; H400 M-Factor (Acute): 100	20 - 48

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

#### REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).

Status : Not applicable

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

- General advice : Immediate medical attention is required.  
Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.  
Symptoms of poisoning may appear several hours later.
- If inhaled : If breathed in, move person into fresh air.  
If breathing is difficult, give oxygen.  
Call a physician or poison control centre immediately.
- In case of skin contact : Take off contaminated clothing and shoes immediately.  
Rinse immediately with plenty of water.  
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.  
Wash contaminated clothing before re-use.
- In case of eye contact : Rinse with plenty of water.  
Get medical attention immediately. Continue to rinse during transport.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.

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If swallowed : Clean mouth with water and drink afterwards plenty of water.  
Never give anything by mouth to an unconscious person.  
Take victim immediately to hospital.  
Do not induce vomiting! May cause chemical burns in mouth and throat.

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

Symptoms : The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.

Risks : Toxic if swallowed.  
Causes serious eye damage.  
Corrosive to the respiratory tract.  
Causes severe burns.

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

Treatment : Treat symptomatically.

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## SECTION 5: FIREFIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Water spray  
Foam

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

Specific hazards during firefighting / Specific hazards arising from the chemical : Heating or fire conditions liberates toxic gas.  
Water spray may be ineffective unless used by experienced firefighters.  
Do not allow run-off from fire fighting to enter drains or water courses.

Combustion products : Fire will produce smoke containing hazardous combustion products (see section 10).

### 5.3 Advice for firefighters

Special protective equipment for firefighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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

Personal precautions : Use personal protective equipment.

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Wear respiratory protection.  
Ensure adequate ventilation.

## 6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.  
If the product contaminates rivers and lakes or drains inform respective authorities.

## 6.3 Methods and materials for containment and cleaning up

Methods for cleaning up / : Soak up with inert absorbent material.  
Methods for containment : Keep in suitable, closed containers for disposal.

## 6.4 Reference to other sections

Additional advice : For personal protection see section 8.

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## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Advice on safe handling : For personal protection see section 8.  
Avoid formation of aerosol.  
Do not breathe vapours or spray mist.  
Smoking, eating and drinking should be prohibited in the application area.  
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Keep away from oxidizing agents.  
Use only non-sparking tools.

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

Requirements for storage areas and containers : Prevent unauthorized access.  
Keep container tightly closed in a dry and well-ventilated place.  
Store in closed dark containers made of anti-corrosive material.

Advice on common storage : Do not store near acids.

Other data : No decomposition if stored and applied as directed.

### 7.3 Specific end use(s)

Specific use(s) : Consult the technical guidelines for the use of this substance/mixture.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

**Components with workplace control parameters**

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Contains no substances with occupational exposure limit values.

## Occupational exposure limits of decomposition products

Decomposition products	CAS-No.	Value	Control parameters	Update	Basis	Form of exposure
Hydrogen sulphide	7783-06-4, 7783-06-4	TWA	5 ppm 7 mg/m3	2009-12-19	2009/161/EU	
	Further information	:	Indicative			
		STEL	10 ppm 14 mg/m3	2009-12-19	2009/161/EU	
	Further information	:	Indicative			
		TWA	5 ppm 7 mg/m3	2005-04-06	GB EH40	
		STEL	10 ppm 14 mg/m3	2005-04-06	GB EH40	
Hydrogen sulphide	7783-06-4, 7783-06-4	TWA	1 ppm	2013-03-01	ACGIH	
	Further information	:	CNS impair: Central Nervous System impairment URT irr: Upper Respiratory Tract irritation			
		STEL	5 ppm	2013-03-01	ACGIH	
	Further information	:	CNS impair: Central Nervous System impairment URT irr: Upper Respiratory Tract irritation			
		C	10 ppm 15 mg/m3	2013-10-08	NIOSH REL	
	Further information	:	10 minute ceiling value			
		CEIL	20 ppm	2012-07-01	OSHA Z-2	
	Further information	:	Z37.2-1966			
		Peak	50 ppm	2012-07-01	OSHA Z-2	
	Further information	:	Z37.2-1966			
		TWA	10 ppm 14 mg/m3	1989-01-19	OSHA P0	
		STEL	15 ppm 21 mg/m3	1989-01-19	OSHA P0	
	Further information	:	(2): See Table Z-2			
		STEL	15 ppm 21 mg/m3	2014-11-26	CAL PEL	

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		C	50 ppm	2014-11-26	CAL PEL	
		PEL	10 ppm 14 mg/m <sup>3</sup>	2014-11-26	CAL PEL	

## Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
Sodium hydrogensulphide	Workers	Inhalation	Long-term local effects	1.0 mg/m <sup>3</sup>
	Workers	Inhalation	Acute local effects	2 mg/m <sup>3</sup>

## Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
Sodium hydrogensulphide	Fresh water	0.00027 mg/l
	Intermittent water	0.00027 mg/l
	Marine water	0.00027 mg/l
	Fresh water sediment	0.0176 mg/kg dry weight
	Marine sediment	0.0176 mg/kg dry weight
	Sewage treatment plant	105 mg/l
	Sewage treatment plant	0.016 mg/l

## 8.2 Exposure controls

### Engineering controls

Effective exhaust ventilation system

Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal protective equipment

Respiratory protection : In the case of vapour or aerosol formation use a respirator with an approved filter.  
Wear full face mask supplied with:  
Combination filter: ABEKP.

Hand protection : For prolonged or repeated contact use protective gloves.  
  
Protective gloves complying with EN 374.

Eye protection : Wear eye/face protection.  
Tightly fitting safety goggles  
Face-shield

Skin and body protection : Protective suit

Hygiene measures : Avoid contact with skin, eyes and clothing.  
When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and immediately after handling the

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product.

## Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.  
If the product contaminates rivers and lakes or drains inform respective authorities.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

#### Appearance

Form : liquid  
Colour : yellow  
green  
Odour : rotten-egg like  
Odour Threshold : No data available

#### Safety data

pH : 11.3 - 11.7  
Melting point/freezing point : -13 - 4 °C  
Boiling point/boiling range : 110 - 120 °C  
Flash point : Not applicable  
Evaporation rate : No data available  
Flammability (solid, gas) : Not applicable  
Flammability (liquids) : Not classified as a flammability hazard  
Lower explosion limit : Not applicable  
Upper explosion limit : Not applicable  
Vapour pressure : 15 - 20 hPa at 20 °C  
Relative vapour density : similar to water  
Relative density : 1.185 - 1.320 at 20 °C  
Bulk density : Not applicable  
Water solubility : Miscible.  
Solubility in other solvents : Soluble in alcohols.



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Partition coefficient: n-octanol/water	: log Pow: -3.5
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, dynamic	: 3 - 10 mPa.s
Viscosity, kinematic	: 2.27 - 8.44 mm <sup>2</sup> /s at 20 °C
Explosive properties	: Not explosive
Oxidizing properties	: Not classified as oxidising.

## 9.2 Other information

Corrosive to metals : Corrosive to metals

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

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## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

Stable under normal conditions.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

Hazardous polymerisation does not occur.

Contact with acids liberates toxic gas.

### 10.4 Conditions to avoid

Conditions to avoid : Do not freeze.  
Extremes of temperature and direct sunlight.

### 10.5 Incompatible materials

Materials to avoid : Acids  
Oxidizing agents

### 10.6 Hazardous decomposition products

Hazardous decomposition products : Hydrogen sulphide  
Sulphur oxides

Thermal decomposition : No data available

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## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Product information:

Acute toxicity	:	Toxic if swallowed.
Skin corrosion/irritation	:	Causes severe burns.
Serious eye damage/eye irritation	:	Causes serious eye damage.
Respiratory or skin sensitisation	:	Respiratory sensitisation: Not classified based on available information. Skin sensitisation: Not classified based on available information.
Germ cell mutagenicity	:	Not classified based on available information.
Carcinogenicity	:	Not classified based on available information.
Reproductive toxicity	:	Not classified based on available information.
STOT - single exposure	:	Corrosive to the respiratory tract.
STOT - repeated exposure	:	Not classified based on available information.
Aspiration hazard	:	Not classified based on available information.
Further information	:	No further data available.

#### Test result

Acute oral toxicity	:	Acute toxicity estimate: 208.33 mg/kg Method: Calculation method
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#### Toxicology data for the components:

##### Sodium hydrogensulphide

#### Acute toxicity:

Acute oral toxicity	:	LD50: 100 - 215 mg/kg Species: Rat Method: OECD Test Guideline 401
Acute inhalation toxicity	:	Assessment: Corrosive to the respiratory tract.
Skin corrosion/irritation	:	Result: Causes burns.
Serious eye damage/eye irritation	:	Result: Risk of serious damage to eyes.
Germ cell mutagenicity	:	
Genotoxicity in vitro	:	In vitro gene mutation study in mammalian cells mouse lymphoma cells Result: negative Method: OECD Test Guideline 476

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Read-across from supporting substance (structural analogue or surrogate).

Ames test  
Result: negative  
Method: OECD Test Guideline 471

Genotoxicity in vivo : In vivo micronucleus test  
Method: OECD Test Guideline 474  
Result:  
negative

Reproductive toxicity/Fertility : Species: Rat  
Application Route: Inhalation  
Fertility: No observed adverse effect concentration Parent: > 111 mg/m<sup>3</sup>  
Method: OECD Test Guideline 421  
GLP: yes  
Result: Animal testing did not show any effects on fertility.

Species: Mouse  
Application Route: Inhalation  
Fertility: No observed adverse effect concentration Parent: > 111 mg/m<sup>3</sup>  
Method: OECD Test Guideline 421  
GLP: yes  
Result: Animal testing did not show any effects on fertility.

STOT - single exposure : Exposure routes: Inhalation  
Target Organs: Respiratory system  
The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure : Exposure routes: Inhalation  
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard : No aspiration toxicity classification

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## SECTION 12: ECOLOGICAL INFORMATION

### Product information: Ecotoxicology Assessment

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic life.

### 12.1 Toxicity

#### Components: Ecotoxicology Assessment Sodium hydrogensulphide

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Acute aquatic toxicity : Very toxic to aquatic life.

## Test result

### Sodium hydrogensulphide

Toxicity to fish : LC50: 0.0027 mg/l  
Exposure time: 96 h  
Species: Fish  
Test Type: flow-through test  
Read-across from supporting substance (structural analogue or surrogate).

Toxicity to daphnia and other aquatic invertebrates : LC50: 0.02 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Read-across from supporting substance (structural analogue or surrogate).

Toxicity to algae : NOEC: 0.041 mg/l  
Exposure time: 72 h  
Species: Skeletonema costatum (marine diatom)  
Test Type: Marine water  
Read-across from supporting substance (structural analogue or surrogate).

M-Factor (Acute) : 100

Toxicity to bacteria : NOEC: ca. 8,000 mg/l  
Exposure time: 37 d  
Species: activated sludge  
Read-across from supporting substance (structural analogue or surrogate).

## 12.2 Persistence and degradability

### Product information:

Biodegradability : Result: Biodegradable  
Hydrolyses readily.

### Components:

#### Sodium hydrogensulphide

Biodegradability : Result: Biodegradable  
Hydrolyses readily.

## 12.3 Bioaccumulative potential

### Product information:

Bioaccumulation : Bioaccumulation is unlikely.

### Components:

#### Sodium hydrogensulphide

Bioaccumulation : Exposure time: 6 d  
Bioconcentration factor (BCF): 1.6

## 12.4 Mobility in soil

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**Product information** : No information available.

**Components** : No information available.

## 12.5 Results of PBT and vPvB assessment

### Product information:

PBT and vPvB assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**Components** : No information available.

## 12.6 Other adverse effects

**Product information** : No information available.

**Components** : No information available.

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## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Hazardous waste  
Dispose of contents/container in accordance with local regulation.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.

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## SECTION 14: TRANSPORT INFORMATION

### 14.1 UN number

ADR : UN 2922  
RID : UN 2922  
IMDG-Code : UN 2922  
IATA-DGR : UN 2922

### 14.2 Proper shipping name

ADR : CORROSIVE LIQUID, TOXIC, N.O.S.  
(Sodium hydrogensulphide)  
RID : CORROSIVE LIQUID, TOXIC, N.O.S.  
(Sodium hydrogensulphide)  
IMDG-Code : CORROSIVE LIQUID, TOXIC, N.O.S.  
(Sodium hydrogensulphide)  
IATA-DGR : Corrosive liquid, toxic, n.o.s.  
(Sodium hydrogensulphide)

### 14.3 Transport hazard class

ADR : 8 (6.1)  
RID : 8 (6.1)

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**IMDG-Code** : 8 (6.1)

**IATA-DGR** : 8 (6.1)

## 14.4 Packing group

### ADR

Packing group : II

Classification Code : CT1

Hazard Identification Number : 86

Labels : 8 (6.1)

Tunnel restriction code : (E)

### RID

Packing group : II

Classification Code : CT1

Hazard Identification Number : 86

Labels : 8 (6.1)

### IMDG-Code

Packing group : II

Labels : 8 (6.1)

EmS Code : F-A, S-B

### IATA-DGR

Packing instruction (cargo aircraft) : 855

Packing instruction (passenger aircraft) : 851

Packing instruction (LQ) : Y840

Packing group : II

Labels : 8 (6.1)

## 14.5 Environmental hazards

### ADR

Environmentally hazardous : yes

### RID

Environmentally hazardous : yes

### IMDG-Code

Marine pollutant : yes (Sodium hydrogensulphide)

### IATA-DGR

Environmentally hazardous : yes

## 14.6 Special precautions for user

Not applicable

## 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

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## SECTION 15: REGULATORY INFORMATION

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

Major Accident Hazard Legislation : Seveso Directive  
2012/18/EU  
ACUTE TOXIC  
H2

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Quantity 1: 50 t  
Quantity 2: 200 t

: Seveso Directive  
2012/18/EU  
ENVIRONMENTAL HAZARDS  
E1  
Quantity 1: 100 t  
Quantity 2: 200 t

Water contaminating class : WGK 2 water endangering  
(Germany)

## Notification status

TSCA : YES. All chemical substances in this product are either listed on the TSCA Inventory or in compliance with a TSCA Inventory exemption.  
DSL : YES. All components of this product are on the Canadian DSL  
AICS : YES. On the inventory, or in compliance with the inventory  
NZIoC : YES. On the inventory, or in compliance with the inventory  
ENCS : YES. On the inventory, or in compliance with the inventory  
ISHL : YES. On the inventory, or in compliance with the inventory  
KECI : YES. On the inventory, or in compliance with the inventory  
PICCS : YES. On the inventory, or in compliance with the inventory  
IECSC : YES. On the inventory, or in compliance with the inventory

For explanation of abbreviation see section 16.

## Further information

This product is to be considered as a preparation according to EU-legislation.

## 15.2 Chemical safety assessment

Sodium hydrogensulphide : A Chemical Safety Assessment has been carried out for this substance.

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## SECTION 16: OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

H290 : May be corrosive to metals.  
H301 : Toxic if swallowed.  
H314 : Causes severe skin burns and eye damage.  
H318 : Causes serious eye damage.  
H400 : Very toxic to aquatic life.

### Classification procedure:

Corrosive to metals, 1, H290, On basis of test data.  
Acute toxicity, 3, H301, Calculation method  
Skin corrosion, 1B, H314, Calculation method  
Serious eye damage, 1, H318, Calculation method  
Acute aquatic toxicity, 1, H400, Calculation method

### Full text of other abbreviations

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ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

## Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



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**Annex :**

**Industrial use as a Processing aid, Processing aid for paper, textile, leather**

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## 1. Short title of Exposure Scenario: Industrial use as a Processing aid, Processing aid for paper, textile, leather

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<b>Main User Groups</b>	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
<b>Environmental Release Categories</b>	: ERC6b: Industrial use of reactive processing aids
<b>Process categories</b>	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent

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## 2.1 Contributing scenario controlling environmental exposure for: ERC6b: Industrial use of reactive processing aids

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### Amount used

<b>Regional use tonnage (tonnes/year):</b>	: 2000 ton(s)/year
<b>Maximum daily site tonnage (kg/day):</b>	: 20000 kg/day

### Environment factors not influenced by risk management

<b>Dilution Factor (River)</b>	: 20
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### Other given operational conditions affecting environmental exposure

<b>Number of emission days per year</b>	: 100
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### Technical conditions and measures / Organizational measures

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- Air** : Wet scrubber for elimination of volatile components from waste gases, Sodium hydroxide scrubber for neutralisation of acidic waste gases, Treat air emission to provide a typical removal efficiency of (%): (Effectiveness (of a measure): 100 %)
- Water** : When the discharged solution contains sulfides, the release of sulfides to surface water from the use of sodium hydrogensulfide in chemical processing should be avoided by either biological oxidation or chemical oxidation (with H<sub>2</sub>O<sub>2</sub> or NaOCl or sulfuric acid at high temperature and pressure) of the sulfides in the waste water to sulfates. Sometimes instead of being oxidized the sulfides are precipitated with metals, resulting in formation of insoluble metal sulfides. Most of the time the waste water is additionally treated in a municipal waste water treatment plant. This results in no release of sulfides and consequently no release of H<sub>2</sub>S. The pH-value is regulated to 6-9. H<sub>2</sub>S gases are cleaned in a scrubber using sodium hydroxide. The remaining H<sub>2</sub>S content in the exhaust gases is below the legal limits. (Effectiveness (of a measure): 100 %)
- Remarks** : In general application of the RMM results in oxidation of the sulfides to sulfates, before final discharge. Consequently, for the identified uses applying such RMM the environmental assessment is done based on sulfate (SO<sub>4</sub><sup>2-</sup>).

## Conditions and measures related to municipal sewage treatment plant

- Type of Sewage Treatment Plant** : All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.
- Sludge Treatment** : No application of sludge to soil

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## 2.2 Contributing scenario controlling worker exposure for: All PROCs: Applicable to all above mentioned process categories.

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### Product characteristics

- Concentration of the Substance in Mixture/Article** : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
- Physical Form (at time of use)** : Aqueous solution

### Frequency and duration of use

- Application duration** : < 8 h
- Frequency of use** : <= 365 days/year

### Other operational conditions affecting workers exposure

- Outdoor / Indoor** : Indoor

### Technical conditions and measures

No specific measures identified.

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

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Assumes a good basic standard of occupational hygiene is implemented., Ensure operatives are trained to minimise exposures., Clean equipment and the work area every day., Clear spills immediately.

## Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection., Wear suitable protective clothing.

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

## Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Please note that under certain acidic conditions, hydrogen sulfide can be formed. Compliance with existing exposure limits for hydrogen sulfide is not part of this exposure scenario and will have to be considered in parallel.

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## 2.3 Contributing scenario controlling worker exposure for: All PROCs: Applicable to all above mentioned process categories.

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### Product characteristics

Concentration of the Substance : Covers the percentage of the substance in the product up to 100 % (unless stated differently).  
Physical Form (at time of use) : Solid, low dustiness

### Frequency and duration of use

Application duration : < 8 h  
Frequency of use : <= 365 days/year

### Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

### Technical conditions and measures

No specific measures identified.

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

Assumes a good basic standard of occupational hygiene is implemented., Ensure operatives are trained to minimise exposures., Clean equipment and the work area every day., Clear spills immediately.

## Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection., Wear suitable protective clothing.

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

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## 2.4 Contributing scenario controlling worker exposure for: PROC22: Potentially closed processing operations with minerals/ metals at elevated temperature; Industrial setting

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### Product characteristics

Physical Form (at time of use) : Solid, low dustiness

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## Technical conditions and measures

Provide extraction ventilation at points where emissions occur., Ensure material transfers are under containment or extract ventilation. (Effectiveness (of a measure): 78 %)

## Conditions and measures related to personal protection, hygiene and health evaluation

Wear a disposable mask FFP1 (APF=4) or better (Effectiveness (of a measure): 75 %)

## 3. Exposure estimation and reference to its source

### Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC6b	EUSES		Fresh water		76 mg/L	0.72

### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1	MEASE		Long term inhalation	0.001 mg/m <sup>3</sup>	< 0.01
			Long term dermal	mg/kg bw/day	
PROC2	MEASE		Long term inhalation	0.001 mg/m <sup>3</sup>	< 0.01
			Long term dermal	mg/kg bw/day	
PROC3	MEASE		Long term inhalation	0.01 mg/m <sup>3</sup>	0.01
			Long term dermal	mg/kg bw/day	
PROC4	MEASE		Long term inhalation	0.05 mg/m <sup>3</sup>	0.05
			Long term dermal	mg/kg bw/day	
PROC5	MEASE		Long term inhalation	0.05 mg/m <sup>3</sup>	0.05
			Long term dermal	mg/kg bw/day	
PROC8a	MEASE		Long term inhalation	0.05 mg/m <sup>3</sup>	0.05
			Long term dermal	mg/kg bw/day	
PROC8b	MEASE		Long term inhalation	0.01 mg/m <sup>3</sup>	0.01
			Long term dermal	mg/kg bw/day	

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PROC9	MEASE		Long term inhalation	0.01 mg/m <sup>3</sup>	0.01
			Long term dermal	mg/kg bw/day	
PROC13	MEASE		Long term inhalation	0.01 mg/m <sup>3</sup>	0.01
			Long term dermal	mg/kg bw/day	
PROC14	MEASE		Long term inhalation	0.01 mg/m <sup>3</sup>	0.01
			Long term dermal	mg/kg bw/day	
PROC15	MEASE		Long term inhalation	0.01 mg/m <sup>3</sup>	0.01
			Long term dermal	mg/kg bw/day	
PROC1	MEASE	solid	Long term inhalation	0.01 mg/m <sup>3</sup>	0.01
			Long term dermal	mg/kg bw/day	
PROC2	MEASE	solid	Long term inhalation	0.01 mg/m <sup>3</sup>	0.01
			Long term dermal	mg/kg bw/day	
PROC3	MEASE	solid	Long term inhalation	0.1 mg/m <sup>3</sup>	0.1
			Long term dermal	mg/kg bw/day	
PROC4	MEASE	solid	Long term inhalation	0.5 mg/m <sup>3</sup>	0.5
			Long term dermal	mg/kg bw/day	
PROC5	MEASE	solid	Long term inhalation	0.5 mg/m <sup>3</sup>	0.5
			Long term dermal	mg/kg bw/day	
PROC8a	MEASE	solid	Long term inhalation	0.5 mg/m <sup>3</sup>	0.5
			Long term dermal	mg/kg bw/day	
PROC8b	MEASE	solid	Long term inhalation	0.1 mg/m <sup>3</sup>	0.1
			Long term dermal	mg/kg bw/day	
PROC9	MEASE	solid	Long term inhalation	0.1 mg/m <sup>3</sup>	0.1
			Long term dermal	mg/kg bw/day	
PROC13	MEASE	solid	Long term inhalation	0.1 mg/m <sup>3</sup>	0.1
			Long term dermal	mg/kg bw/day	

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PROC14	MEASE	solid	Long term inhalation	0.1 mg/m <sup>3</sup>	0.1
			Long term dermal	mg/kg bw/day	
PROC15	MEASE	solid	Long term inhalation	0.1 mg/m <sup>3</sup>	0.1
			Long term dermal	mg/kg bw/day	
PROC22	MEASE	solid	Long term inhalation	0.385 mg/m <sup>3</sup>	0.385
			Long term dermal	mg/kg bw/day	

ERC6b: Industrial use of reactive processing aids

PROC1: Use in closed process, no likelihood of exposure

PROC13: Treatment of articles by dipping and pouring

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

PROC15: Use as laboratory reagent

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC22: Potentially closed processing operations with minerals/ metals at elevated temperature; Industrial setting

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)

PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

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

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Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk.