

## Aluminium sulfate

Version number: GHS 2.0  
 Replaces version of: 2019-02-05 (GHS 1)

Revision: 2022-12-21

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

#### 1.1 Product identifier

Identification of the substance	<b>Aluminium sulfate</b>
CAS number	10043-01-3
Article number	A0008468

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

Relevant identified uses	General use
Uses advised against	Do not use for products which come into direct contact with the skin.

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

Chemos GmbH & Co. KG  
 Sonnenring 7  
 84032 Altdorf  
 Germany

Telephone: +49 871-966346-0  
 Telefax: +49 871-966346-13  
 e-mail: chemos@chemos.de  
 Website: <http://www.chemos.de/>

e-mail (competent person)	chemos@chemos.de
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#### 1.4 Emergency telephone number

Emergency information service	+49 89 1 92 40
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Poison centre				
Country	Name	Postal code/ city	Telephone	Telefax
United Kingdom	National Poison Information Centre Medical Toxicology Unit	SE14 5ER London	+44 171 635 91 91	

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.16	substance or mixture corrosive to metals	1	Met. Corr. 1	H290
3.2	skin corrosion/irritation	1C	Skin Corr. 1C	H314
3.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
4.1A	hazardous to the aquatic environment - acute hazard	1	Aquatic Acute 1	H400
4.1C	hazardous to the aquatic environment - chronic hazard	1	Aquatic Chronic 1	H410

For full text of abbreviations: see SECTION 16.

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The most important adverse physicochemical, human health and environmental effects

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

### 2.2 Label elements

Labelling

- Signal word danger

- Pictograms

GHS05, GHS09



- Hazard statements

H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H410 Very toxic to aquatic life with long lasting effects.

- Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/  
....  
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER/doctor.  
P390 Absorb spillage to prevent material damage.  
P391 Collect spillage.  
P501 Dispose of contents/container to industrial combustion plant.

### 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	Aluminium sulfate
Identifiers	
CAS No	10043-01-3
EC No	233-135-0
Molar mass	342.1 g/mol

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**SECTION 4: First aid measures****4.1 Description of first aid measures****General notes**

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

**Following inhalation**

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

**Following skin contact**

Rinse skin with water/shower.

**Following eye contact**

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

**Following ingestion**

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

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

Symptoms and effects are not known to date.

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

none

**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Water, Foam, Alcohol resistant foam, ABC-powder

**Unsuitable extinguishing media**

Water jet

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

Substance or mixture corrosive to metals.

**5.3 Advice for firefighters**

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Remove persons to safety.

**For emergency responders**

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

**6.2 Environmental precautions**

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

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

Advice on how to contain a spill

Covering of drains, Take up mechanically

Advice on how to clean up a spill

Take up mechanically.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

### 6.4 Reference to other sections

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

Recommendations

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

Use local and general ventilation. Take precautionary measures against static discharge. Use only in well-ventilated areas. Ground/bond container and receiving equipment.

- Specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

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

Managing of associated risks

- Explosive atmospheres

Removal of dust deposits.

- Corrosive conditions

Store in corrosive resistant container with a resistant inner liner.

- Ventilation requirements

Use local and general ventilation.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

### 7.3 Specific end use(s)

See section 16 for a general overview.

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### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)											
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Ceiling-C [ppm]	Ceiling-C [mg/m <sup>3</sup> ]	Notation	Source
GB	dust		WEL		10					i	EH40/2005
GB	dust		WEL		4					r	EH40/2005

##### Notation

Ceiling-C	ceiling value is a limit value above which exposure should not occur
i	inhalable fraction
r	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)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours
	time-weighted average (unless otherwise specified)

#### Human health values

Relevant DNELs and other threshold levels				
Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	13.4 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	3.8 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

#### 8.2 Exposure controls

##### Appropriate engineering controls

General ventilation.

##### Individual protection measures (personal protective equipment)

##### Eye/face protection

Wear eye/face protection.

##### Skin protection

##### - Hand protection

Wear protective gloves.

##### - Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

##### Respiratory protection

Particulate filter device (EN 143).

##### Environmental exposure controls

Use appropriate container to avoid environmental contamination. 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

Physical state	solid
Colour	white - colourless
Odour	odourless
Melting point/freezing point	770 °C
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	not relevant
pH (value)	not applicable
Kinematic viscosity	not relevant
Solubility(ies)	not determined

#### Partition coefficient

Partition coefficient n-octanol/water (log value)	not relevant (inorganic)
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Vapour pressure	not determined
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#### Density and/or relative density

Density	2.71 g/cm <sup>3</sup>
Relative vapour density	information on this property is not available

Particle characteristics	no data available
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#### 9.2 Other information

Information with regard to physical hazard classes	there is no additional information
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### Other safety characteristics

Surface tension	73 mN/m (20 °C) (ECHA)
Solid content	100 %

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". It's a reactive substance. Substance or mixture corrosive to metals.

### 10.2 Chemical stability

See below "Conditions to avoid".

### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

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

### 10.5 Incompatible materials

There is no additional information.

### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Classification acc. to GHS

##### Acute toxicity

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4: May be harmful if swallowed.

##### Skin corrosion/irritation

Causes severe skin burns and eye damage.

##### Serious eye damage/eye irritation

Causes serious eye damage.

##### Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

##### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

##### Carcinogenicity

Shall not be classified as carcinogenic.

##### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

##### Specific target organ toxicity - single exposure

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

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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.

### 11.2 Information on other hazards

There is no additional information.

## SECTION 12: Ecological information

### 12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute)			
Endpoint	Value	Species	Exposure time
LC50	>85.9 mg/l	fish	96 h
EC50	>0.156 mg/l	fish	96 h
ErC50	0.644 mg/l	algae	72 h

  

Aquatic toxicity (chronic)			
Endpoint	Value	Species	Exposure time
EC50	>1,000 mg/l	microorganisms	180 min

### 12.2 Persistence and degradability

Data are not available.

### 12.3 Bioaccumulative potential

Data are not available.

### 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

Information on this property is not available.

### 12.7 Other adverse effects

Data are not available.



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**SECTION 13: Disposal considerations****13.1 Waste treatment methods**

Waste treatment-relevant information

Recycling/reclamation of other inorganic materials.

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/packageings

It is a dangerous waste; only packageings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

**Remarks**

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

**SECTION 14: Transport information****14.1 UN number or ID number**

ADR/RID	UN 3260
IMDG-Code	UN 3260
ICAO-TI	UN 3260

**14.2 UN proper shipping name**

ADR/RID	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.
IMDG-Code	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.
ICAO-TI	Corrosive solid, acidic, inorganic, n.o.s.
Technical name	Aluminium sulfate

**14.3 Transport hazard class(es)**

ADR/RID	8
IMDG-Code	8
ICAO-TI	8

**14.4 Packing group**

ADR/RID	III
IMDG-Code	III
ICAO-TI	III

**14.5 Environmental hazards**

hazardous to the aquatic environment

**14.6 Special precautions for user**

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

**14.7 Maritime transport in bulk according to IMO instruments**

The cargo is not intended to be carried in bulk.

**Information for each of the UN Model Regulations**

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### Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) - Additional information

Classification code C2  
Danger label(s) 8, fish and tree



Environmental hazards yes (hazardous to the aquatic environment)  
Special provisions (SP) 274  
Excepted quantities (EQ) E1  
Limited quantities (LQ) 5 kg  
Transport category (TC) 3  
Tunnel restriction code (TRC) E  
Hazard identification No 80  
Emergency Action Code 2X

### Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) - Additional information

Classification code C2  
Danger label(s) 8, fish and tree



Environmental hazards yes (hazardous to water)  
Special provisions (SP) 274  
Excepted quantities (EQ) E1  
Limited quantities (LQ) 5 kg  
Transport category (TC) 3  
Hazard identification No 80

### International Maritime Dangerous Goods Code (IMDG) - Additional information

Marine pollutant yes (hazardous to the aquatic environment)  
Danger label(s) 8, fish and tree



Special provisions (SP) 223, 274  
Excepted quantities (EQ) E1  
Limited quantities (LQ) 5 kg  
EmS F-A, S-B  
Stowage category A  
Segregation group 1 - Acids

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

Environmental hazards yes (hazardous to the aquatic environment)

Danger label(s) 8



Special provisions (SP) A3

Excepted quantities (EQ) E1

Limited quantities (LQ) 5 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)

##### Deco-Paint Directive

VOC content	0 %
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##### Industrial Emissions Directive (IED)

VOC content	0 %
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##### National regulations (GB)

##### List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

not listed

##### Restrictions according to GB REACH, Annex 17

not listed

##### National inventories

Country	Inventory	Status
AU	AIIC	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed as "ACTIVE"

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### Legend

AIIC	Australian Inventory of Industrial Chemicals
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSC	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.

## SECTION 16: Other information

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

Section	Former entry (text/value)	Actual entry (text/value)	Safety-rel- evant
1.1	Registration number (REACH): this information is not available		yes
1.2		Uses advised against: Do not use for products which come into direct contact with the skin.	yes
1.4	Emergency information service: This number is only available during the following office hours: Mon - Thu 08:00 AM - 05:00 PM, Fri 08:00 AM - 12:00 PM	Emergency information service: +49 89 1 92 40	yes
1.4		Poison centre: change in the listing (table)	yes
2.1		Classification acc. to GHS: change in the listing (table)	yes
2.1		The most important adverse physicochemical, hu- man health and environmental effects: Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis. Spillage and fire water can cause pollution of watercourses.	yes
2.2		- Pictograms: change in the listing (table)	yes
2.2		- Hazard statements: change in the listing (table)	yes
2.2		- Precautionary statements: change in the listing (table)	yes
3.1		Molar mass: 342.1 g/mol	yes
4.1	Following inhalation: If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.	Following inhalation: If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.	yes

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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
5.1	Suitable extinguishing media: Water, Foam, ABC-powder	Suitable extinguishing media: Water, Foam, Alcohol resistant foam, ABC-powder	yes
5.2	Hazardous combustion products: Nitrogen oxides (NOx)		yes
6.2	Environmental precautions: Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.	Environmental precautions: Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.	yes
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.	Reference to other sections: Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.	yes
9.1	Appearance		yes
9.1	Other safety parameters		yes
9.1		Lower and upper explosion limit: not determined	yes
9.1	Evaporation rate: not determined		yes
9.1	Explosion limits of dust clouds: not determined		yes
9.1		Decomposition temperature: not relevant	yes
9.1		Kinematic viscosity: not relevant	yes
9.1	Solubility(ies)	Solubility(ies): not determined	yes
9.1	- n-octanol/water (log KOW): this information is not available	Partition coefficient n-octanol/water (log value): not relevant (inorganic)	yes
9.1		Density and/or relative density	yes
9.1	Vapour density: this information is not available		yes
9.1	Water solubility: 12 µg/l at 21.5 °C		yes
9.1	Viscosity: not relevant (solid matter)		yes
9.1	Explosive properties: none		yes
9.1	Oxidising properties: none		yes
9.1		Relative vapour density: information on this property is not available	yes
9.1		Particle characteristics: no data available	yes

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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
9.2		Information with regard to physical hazard classes: there is no additional information	yes
9.2		Other safety characteristics	yes
11.1	Skin corrosion/irritation: Shall not be classified as corrosive/irritant to skin.	Skin corrosion/irritation: Causes severe skin burns and eye damage.	yes
11.2		Information on other hazards: There is no additional information.	yes
12.1	Toxicity: Shall not be classified as hazardous to the aquatic environment.	Toxicity: Very toxic to aquatic life with long lasting effects.	yes
12.1		Aquatic toxicity (acute): change in the listing (table)	yes
12.1		Aquatic toxicity (chronic): change in the listing (table)	yes
12.6	Other adverse effects: Data are not available.	Endocrine disrupting properties: Information on this property is not available.	yes
14.1	UN number: 3260	UN number or ID number	yes
14.1		ADR/RID: UN 3260	yes
14.1		IMDG-Code: UN 3260	yes
14.1		ICAO-TI: UN 3260	yes
14.2	UN proper shipping name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	UN proper shipping name	yes
14.2		ADR/RID: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	yes
14.2		IMDG-Code: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	yes
14.2		ICAO-TI: Corrosive solid, acidic, inorganic, n.o.s.	yes
14.3	Class: 8 (corrosive substances)		yes
14.3		ADR/RID: 8	yes
14.3		IMDG-Code: 8	yes
14.3		ICAO-TI: 8	yes
14.4	Packing group: III (substance presenting low danger)	Packing group	yes
14.4		ADR/RID: III	yes

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14.4		IMDG-Code: III	yes
14.4		ICAO-TI: III	yes
14.5	Environmental hazards: non-environmentally hazardous acc. to the dangerous goods regulations	Environmental hazards: hazardous to the aquatic environment	yes
14.7	UN number: 3260		yes
14.7	Proper shipping name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.		yes
14.7	Class: 8		yes
14.7	Packing group: III		yes
14.7	Danger label(s): 8	Danger label(s): 8, fish and tree	yes
14.7		Danger label(s): change in the listing (table)	yes
14.7		Environmental hazards: yes (hazardous to the aquatic environment)	yes
14.7		Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) - Additional information	yes
14.7		Classification code: C2	yes
14.7		Danger label(s): 8, fish and tree	yes
14.7		Danger label(s): change in the listing (table)	yes
14.7		Environmental hazards: yes (hazardous to water)	yes
14.7		Special provisions (SP): 274	yes
14.7		Excepted quantities (EQ): E1	yes
14.7		Limited quantities (LQ): 5 kg	yes
14.7		Transport category (TC): 3	yes
14.7		Hazard identification No: 80	yes
14.7	UN number: 3260		yes
14.7	Proper shipping name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.		yes

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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
14.7	Class: 8		yes
14.7	Packing group: III		yes
14.7	Marine pollutant: -	Marine pollutant: yes (hazardous to the aquatic environment)	yes
14.7	Danger label(s): 8	Danger label(s): 8, fish and tree	yes
14.7		Danger label(s): change in the listing (table)	yes
14.7	UN number: 3260		yes
14.7	Proper shipping name: Corrosive solid, acidic, inorganic, n.o.s.		yes
14.7	Class: 8		yes
14.7	Packing group: III		yes
14.7		Environmental hazards: yes (hazardous to the aquatic environment)	yes
15.1		Relevant provisions of the European Union (EU)	yes
15.1		Deco-Paint Directive	yes
15.1		VOC content: 0 %	yes
15.1		Industrial Emissions Directive (IED)	yes
15.1		VOC content: 0 %	yes
15.1		National regulations (GB)	yes
15.1		List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list: not listed	yes
15.1		Restrictions according to GB REACH, Annex 17: not listed	yes
15.1		National inventories	yes
15.1		National inventories: change in the listing (table)	yes
16		Abbreviations and acronyms: change in the listing (table)	yes
16	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 2015/830/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).	Key literature references and sources for data: Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).	yes



## Aluminium sulfate

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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
16		List of relevant phrases (code and full text as stated in section 2 and 3): change in the listing (table)	yes

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EH40/2005	EH40/2005 Workplace exposure limits ( <a href="http://www.nationalarchives.gov.uk/doc/open-government-licence/">http://www.nationalarchives.gov.uk/doc/open-government-licence/</a> )
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
GB REACH	The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended)
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals

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Abbr.	Descriptions of used abbreviations
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
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

### Key literature references and sources for data

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

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

Code	Text
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic 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.