

SECTION 1: Identification

1.1. Product identifier

Trade name	: ALUMINIUM SULFATE 18hydr
Type of product	: Hygroscopic substance. Preventive measures apply to the substance in dry state only
EC-No.	: 233-135-0
CAS-No.	: 7784-31-8
Product code	: 101060xxx
Formula	: $Al_2(SO_4)_3 \cdot 18H_2O$

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

Recommended uses and restrictions	: For laboratory use only
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1.3. Supplier's details

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 6 Wakefield Road
 Founders Hill
 1609 Johannesburg - South Africa
 T +27 11 452 1116 - F +27 86 588 0293
techlab@labchem.co.za - www.labchem.co.za

1.4. Emergency telephone number

Emergency number	: +27 11 452 1116
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Corrosive to metals, Category 1	H290
Acute toxicity (oral) Not classified	
Serious eye damage/eye irritation, Category 1	H318
Hazardous to the aquatic environment - Acute Hazard Not classified	
Hazardous to the aquatic environment — Chronic Hazard, Category 3	H412
Full text of H statements : see section 16	

2.2. Label elements

Labelling according to the United Nations GHS

Hazard pictograms (GHS-ZA) :



GHS05

Signal word (GHS-ZA)	: Danger
Hazard statements (GHS-ZA)	: H290 - May be corrosive to metals. H318 - Causes serious eye damage. H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements (GHS-ZA)	: P234 - Keep only in original packaging. P273 - Avoid release to the environment. P280 - Wear protective gloves/protective clothing/eye protection/face protection. 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 or doctor. P390 - Absorb spillage to prevent material damage. P406 - Store in corrosive resistant container with a resistant inner liner. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

Adverse physicochemical, human health and environmental effects	: May be corrosive to metals,Causes serious eye damage,Harmful to aquatic life with long lasting effects.
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According to SANS 10234:2019 and SANS 11014:2010

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance identification codes: See section 1.1

Name	Product identifier	%	Classification according to the United Nations GHS
aluminium sulfate, octadecahydrate (Main constituent)	(CAS-No.) 7784-31-8	≥ 99	Met. Corr. 1, H290 Acute Tox. Not classified (Oral) Eye Dam. 1, H318 Aquatic Acute Not classified Aquatic Chronic 3, H412

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Rinse with water. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Call Poison Information Centre (www.big.be/antigif.html). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation	: AFTER INHALATION OF DUST: Dry/sore throat. Coughing. EXPOSURE TO HIGH CONCENTRATIONS: Respiratory difficulties.
Symptoms/effects after skin contact	: ON CONTINUOUS EXPOSURE/CONTACT: Red skin. AFTER CONTACT WITH WATER: Tingling/irritation of the skin. Itching.
Symptoms/effects after eye contact	: Redness of the eye tissue. Irritation of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Inflammation/damage of the eye tissue. Serious damage to eyes.
Symptoms/effects after ingestion	: AFTER INGESTION OF HIGH QUANTITIES: Irritation of the gastric/intestinal mucosa. Nausea. Vomiting. Abdominal pain. Diarrhoea.
Symptoms/effects upon intravenous administration	: No effects known.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Red skin. Dry skin. Skin rash/inflammation. Slowing ossification. Enlargement/affection of the liver.
Potential adverse human health effects and symptoms	: Non-toxic if swallowed (LD50 oral, rat > 5000 mg/kg). Slightly irritant to skin. Causes serious eye irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Adapt extinguishing media to the environment for surrounding fires. Water spray. Dry powder. Foam.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD: Non combustible.
Explosion hazard	: DIRECT EXPLOSION HAZARD: No direct explosion hazard.
Hazardous decomposition products in case of fire	: On burning: release of toxic and corrosive gases/vapours (sulphur oxides) and formation of metallic fumes.

5.3. Advice for firefighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

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- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Safety glasses. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Reactivity hazard: compressed air/oxygen apparatus. Reactivity hazard: gas-tight suit.
- Emergency procedures : Ventilate spillage area. Mark the danger area. Prevent dust cloud formation. No naked flames. Avoid ingress of water in the containers. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation. Avoid contact with skin and eyes.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. If reacting: dilute toxic gas/vapour with water spray. Take account of toxic/corrosive precipitation water.
- Methods for cleaning up : Mechanically recover the product. Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
- Other information : Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Avoid raising dust. Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Handle uncleaned empty containers as full ones. Do not discharge the waste into the drain. Avoid contact of substance with water. Keep container tightly closed. Avoid contact with skin and eyes. Wear personal protective equipment.
- Hygiene measures : Observe strict hygiene. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in corrosive resistant container with a resistant inner liner. Keep only in original container. Store in a well-ventilated place. Keep cool.
- Storage area : Store at ambient temperature. Keep out of direct sunlight. Store in a dry area. Keep container in a well-ventilated place. Unauthorized persons are not admitted. Meet the legal requirements.
- Incompatible materials : Metals.
- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) bases. water/moisture.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. watertight. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: stainless steel. steel with rubber inner lining. polyethylene. polypropylene. MATERIAL TO AVOID: steel. aluminium. iron. carbon steel.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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South Africa - Occupational Exposure Limits (Recommended Limits)

OEL TWA (mg/m ³)	2 mg/m ³
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According to SANS 10234:2019 and SANS 11014:2010

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Materials for protective clothing	: GIVE EXCELLENT RESISTANCE: butyl rubber. neoprene. natural rubber. nitrile rubber. polyethylene. PVC. tetrafluoroethylene. viton. GIVE POOR RESISTANCE: PVA
Hand protection	: Gloves
Eye protection	: Safety glasses. In case of dust production: protective goggles. Safety glasses
Skin and body protection	: Protective clothing
Respiratory protection	: Dust production: dust mask with filter type P2

Personal protective equipment symbol(s):



8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Powder. Grains. Lumps.
Molecular mass	: 666.45 g/mol
Colour	: Colourless.
Odour	: Odourless.
Odour threshold	: No data available
pH	: 3 – 4 (5 %)
pH solution	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: 86 °C
Freezing point	: Not applicable
Boiling point	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: 86 °C
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Vapour pressure at 50 °C	: No data available
Relative vapour density at 20 °C	: Not applicable
Relative density	: 1.7
Relative density of saturated gas/air mixture	: No data available
Density	: 1690 kg/m ³
Relative gas density	: No data available
Solubility	: Soluble in water. Soluble in acids. Water: 30 g/100ml
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: Not applicable
Lower explosive limit (LEL)	: No data available
Upper explosive limit (UEL)	: No data available

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According to SANS 10234:2019 and SANS 11014:2010

9.2. Other information

Minimum ignition energy	: Not applicable
SADT	: Not applicable
VOC content	: 0 %
Other properties	: Hygroscopic. Acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts violently with (some) bases.

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

metals.

10.6. Hazardous decomposition products

Reacts violently with (strong) oxidizers: release of toxic and corrosive gases/vapours (sulphur oxides). Decomposes exothermically on exposure to water (moisture): release of corrosive products (sulphuric acid vapours).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

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LD50 oral rat	> 9000 mg/kg (Rat, Literature study, Oral)
Skin corrosion/irritation	: Not classified pH: 3 – 4 (5 %)
Serious eye damage/irritation	: Causes serious eye damage. pH: 3 – 4 (5 %)
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Non-toxic if swallowed (LD50 oral, rat > 5000 mg/kg). Slightly irritant to skin. Causes serious eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008. Harmful to aquatic life with long lasting effects.
Ecology - air	: Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: Slightly harmful to crustacea. Slightly harmful to fishes. Groundwater pollutant. Slightly harmful to algae. pH shift. Hydrolysis in water.
Hazardous to the aquatic environment, short-term (acute)	: Not classified.
Hazardous to the aquatic environment, long-term (chronic)	: Harmful to aquatic life with long lasting effects.

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LC50 fish 1	214.6 – 228.5 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Anhydrous form)
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ALUMINIUM SULFATE 18hydr (7784-31-8)	
BCF fish 1	76 – 190 (OECD 305: Bioconcentration: Flow-Through Fish Test, 60 day(s), Salmo salar, Flow-through system, Fresh water, Experimental value, Anhydrous form)

12.2. Persistence and degradability

ALUMINIUM SULFATE 18hydr (7784-31-8)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

ALUMINIUM SULFATE 18hydr (7784-31-8)	
BCF fish 1	76 – 190 (OECD 305: Bioconcentration: Flow-Through Fish Test, 60 day(s), Salmo salar, Flow-through system, Fresh water, Experimental value, Anhydrous form)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

ALUMINIUM SULFATE 18hydr (7784-31-8)	
Mobility in soil	No additional information available
Ecology - soil	No (test)data on mobility of the substance available.

12.5. Other adverse effects

Ozone	: Not classified
Other adverse effects	: No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Do not discharge unmonitored into the environment. Treat using the best available techniques before discharge into drains or the aquatic environment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove to an authorized dump (Class I). Precipitate/make insoluble.
Additional information	: Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

In accordance with SANS / IMDG / IATA

SANS	IMDG	IATA
14.1. UN number		
Not regulated for transport		
14.2. Proper Shipping Name		
Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)		
Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable
14.4. Packing group		
Not applicable	Not applicable	Not applicable
14.5. Environmental hazards		
Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
: No supplementary information available		

14.6. Special precautions for user

- SANS

Transport regulations (UN) : Not subject

- IMDG

Transport regulations (IMDG) : Not subject

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According to SANS 10234:2019 and SANS 11014:2010

- IATA

Transport regulations (IATA) : Not subject

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

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health, and environmental national regulations specific for the product

Regulatory reference : SANS 10234:2008; SANS 11014:2010; SANS 10228:2012;SANS 10229:2010; SANS 10232(1,2,4), SANS 10231:2018; Occupational Health and Safety Act 85 of 1993; National Road Traffic Act 93 of 1996.

SECTION 16: Other information

Issue date : 03/07/2020

Revision date : 03/07/2025

Full text of H-statements:

H290	May be corrosive to metals.
H318	Causes serious eye damage.
H412	Harmful to aquatic life with long lasting effects.

SDS South Africa

The data provided in this Safety Data Sheet (SDS) is correct to the best of our knowledge. The data relates to the specific product as named and is intended as a guide to the safe handling of the product in all its facets. The data may no longer be valid if the product is used in any process or in combination with other products. This SDS is not a quality specification nor any form of guarantee.