

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

#### 1.1. Product identifier

Product form	: Substance
Trade name	: Zinc sulphate hexa 23,8%
Chemical name	: zinc sulphate (hydrous) (mono-, hexa-and hepta hydrate)
IUPAC name	: Zinc sulphate
EC Index-No.	: 030-006-00-9
EC-No.	: 231-793-3
CAS-No.	: 13986-24-8
REACH registration No	: 01-2119474684-27
Product code	: 100.210.000
Type of product	: Pure substance, Hygroscopic substance. Preventive measures apply to the substance in dry state only
Formula	: $ZnSO_4 \cdot (H_2O)_6$
Synonyms	: caswell no 927 / epa pesticide chemical code 08901 / sulfuric acid, zinc salt / sulfuric acid, zinc salt (1:1) / white vitriol (=zinc sulfate) / zinc sulfate (1:1) / zinc sulphate / zinc sulphate (anhydrous) / zinc vitriol (=zinc sulfate)
BIG No	: 20862

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

##### 1.2.1. Relevant identified uses

Main use category	: Industrial use, Professional use
Use of the substance/mixture	: Fertilizers

##### 1.2.2. Uses advised against

No additional information available

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

Biron B.V. B.V.  
De Vecht 5  
NL- 8253 PH Dronten – Flevoland  
The Netherlands  
T +31 (0)321 336 730  
[Info@biron.nl](mailto:Info@biron.nl) - [www.biron.nl](http://www.biron.nl)

#### 1.4. Emergency telephone number

Emergency number	: National Poisons Information Service +44 870 600 6266 worldwide: <a href="http://www.who.int/ipcs/poisons/centre/directory/en">http://www.who.int/ipcs/poisons/centre/directory/en</a>
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### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

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

Acute toxicity (oral), Category 4	H302
Serious eye damage/eye irritation, Category 1	H318
Hazardous to the aquatic environment — Acute Hazard, Category 1	H400
Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410
Full text of H- and EUH-statements: see section 16	

##### Adverse physicochemical, human health and environmental effects

May cause damage to organs through prolonged or repeated exposure. Harmful if swallowed. Causes serious eye damage. Very toxic to aquatic life with long lasting effects.

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### 2.2. Label elements

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

Hazard pictograms (CLP) :



CLP Signal word :

Hazard statements (CLP) :

Precautionary statements (CLP) :

- : Danger
- : H302 - Harmful if swallowed.
- : H318 - Causes serious eye damage.
- : H410 - Very toxic to aquatic life with long lasting effects.
- : P273 - Avoid release to the environment.
- : P280 - Wear protective gloves, protective clothing, eye protection, face protection.
- : P301+P312 - IF SWALLOWED: Call doctor, a POISON CENTER if you feel unwell.
- : P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- : P391 - Collect spillage.

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Zinc sulphate, hexahydrate	CAS-No.: 13986-24-8 EC-No.: 231-793-3 EC Index-No.: 030-006-00-9 REACH-no: 01-2119474684-27	100	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H- and EUH-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. Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation :

- : Remove person to fresh air and keep comfortable for breathing. Seek medical advice. If breathing is difficult, give oxygen.

First-aid measures after skin contact :

- : Remove the victim away from contaminated area. Take off contaminated clothing. Wash with plenty of water/... In all cases of doubt, or when symptoms persist, seek medical attention. Wash skin with plenty of water.

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First-aid measures after eye contact	: Rinse immediately with plenty of water. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Get immediate medical advice/attention. Rinse cautiously with water for several minutes. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Rinse mouth. 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	: Coughing. Dry/sore throat. Difficulty in breathing.
Symptoms/effects after skin contact	: No effects known.
Symptoms/effects after eye contact	: Serious damage to eyes.
Symptoms/effects after ingestion	: AFTER INGESTION OF HIGH QUANTITIES: Gastrointestinal complaints. Nausea. Vomiting. Abdominal pain. Blood in stool. Decreased renal function. Change in the haemogramme/blood composition. Weakening of the immune system.
Chronic symptoms	: No effects known.

### 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	: Making extinguishing agents environment-friendly. Water spray. Dry powder. Foam.
Unsuitable extinguishing media	: high volume water jet.

### 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 heating/burning: release of toxic and corrosive gases/vapours nitrous vapours. Sulphur oxides.

### 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.
Firefighting instructions	: 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	: Fire fighters have to wear suited clothing and an independent respiratory device (SCBA) that covers the face completely with pressure. Clothing for fire fighters (including helmets, protective boots and gloves) according to European Regulation EN 469, give a basic protection level for an incident with chemicals. 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

General measures	: Mark the danger area. Prevent dust cloud formation. No naked flames. Prevent soil and water pollution. Prevent spreading in sewers. Wash contaminated clothes.
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#### 6.1.1. For non-emergency personnel

Protective equipment	: Wear suitable protective clothing. Concerning personal protective equipment to use, see section 8.
Emergency procedures	: Ventilate spillage area. Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.
Measures in case of dust release	: In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

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### 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, collect/pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. Collect spillage.

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.

### 6.4. Reference to other sections

Concerning personal protective equipment to use, see item 8. Concerning disposal elimination after cleaning, see item 13. For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. In case of inadequate ventilation wear respiratory protection. Avoid contact with skin, eyes and clothing. Use personal protective equipment as required. Thoroughly clean/dry the installation before use. Clean contaminated clothing. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Separate working clothes from town clothes. Launder separately. Keep away from food, drink and animal feedingstuffs. Strict hygiene required. 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 a well-ventilated place. Keep cool.

Maximum storage period : 2 year

Storage temperature : 10 – 30 °C

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.

Information on mixed storage : KEEP SUBSTANCE AWAY FROM: (strong) bases. water/moisture.

Storage area : Store at ambient temperature. Store in a dry area. Keep container in a well-ventilated place. Meet the legal requirements.

Special rules on packaging : SPECIAL REQUIREMENTS: closing. watertight. dry. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

### 7.3. Specific end use(s)

Fertilisers.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1 National occupational exposure and biological limit values

No additional information available

#### 8.1.2. Recommended monitoring procedures

No additional information available

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### 8.1.3. Air contaminants formed

No additional information available

### 8.1.4. DNEL and PNEC

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<b>DNEL/DMEL (Workers)</b>	
Long-term - systemic effects, dermal	8.3 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	1 mg/m <sup>3</sup>
<b>DNEL/DMEL (General population)</b>	
Long-term - systemic effects, oral	0.83 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	1.3 mg/m <sup>3</sup>
Long-term - systemic effects, dermal	8.3 mg/kg bodyweight/day
<b>PNEC (Water)</b>	
PNEC aqua (freshwater)	0.0206 mg/l
PNEC aqua (marine water)	0.0061 mg/l
<b>PNEC (Sediment)</b>	
PNEC sediment (freshwater)	117.8 mg/kg dwt
PNEC sediment (marine water)	56.5 mg/kg dwt
<b>PNEC (Soil)</b>	
PNEC soil	35.6 mg/kg dwt
<b>PNEC (STP)</b>	
PNEC sewage treatment plant	52 µg/l

### 8.1.5. Control banding

No additional information available

## 8.2. Exposure controls

### 8.2.1. Appropriate engineering controls

#### Appropriate engineering controls:

Facilities: shower, eye shower. Provide sufficient air exchange and/or exhaust. Ensure good ventilation of the work station.

### 8.2.2. Personal protection equipment

#### Personal protective equipment symbol(s):



#### 8.2.2.1. Eye and face protection

##### Eye protection:

Eye protection. Safety glasses

Eye protection			
Type	Field of application	Characteristics	Standard
Safety glasses		Protective goggles	EN 166

#### 8.2.2.2. Skin protection

##### Skin and body protection:

Wear suitable protective clothing

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Skin and body protection	
Type	Standard
Protective clothing	

**Hand protection:**  
protective gloves

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
	Nitrile rubber	6 (> 480 minutes)	> 0,11		EN ISO 374

**Other skin protection**

**Materials for protective clothing:**

GIVE GOOD RESISTANCE: butyl rubber. PVC

### 8.2.2.3. Respiratory protection

**Respiratory protection:**

[In case of inadequate ventilation] wear respiratory protection.

Respiratory protection			
Device	Filter type	Condition	Standard
Filtering Half-face mask	Type P2		EN 143

### 8.2.2.4. Thermal hazards

No additional information available

### 8.2.3. Environmental exposure controls

**Environmental exposure controls:**

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Solid. Powder.
Molecular mass	: 269.5 g/mol
Colour	: White.
Odour	: Odourless.
Odour threshold	: No data available
pH	: 5.5 – 6.5
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available in the literature
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: > 600 °C
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: Not applicable (solid)
Relative vapour density at 20 °C	: Not applicable
Relative density	: 2.05 – 3.35 (22 °C, Hydrate form, EU Method A.3: Relative Density)
Density	: 800 – 1000 kg/m <sup>3</sup>
Solubility	: Soluble in water. Water: 211 g/l

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Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable (solid)
Explosive properties	: Product is not explosive.
Oxidising properties	: Not applicable.
Explosive limits	: Not applicable

### 9.2. Other information

VOC content	: Not applicable (inorganic)
Other properties	: Hygroscopic.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable in use and storage conditions as recommended in item 7.

### 10.2. Chemical stability

Stable in use and storage conditions as recommended in item 7.

### 10.3. Possibility of hazardous reactions

May react violently with alkalis.

### 10.4. Conditions to avoid

Avoid high temperatures.

### 10.5. Incompatible materials

Carbonates. Hydroxide. Lead. Calcium (Ca).

### 10.6. Hazardous decomposition products

On heating/burning: release of toxic and corrosive gases/vapours (sulphur oxides). and formation of metallic fumes.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

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LD50 oral rat	862 – 4429 mg/kg
LD50 oral	≈ 926 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Remarks on results: other., 95% CL: 636 - 1350
LD50 dermal rat	> 2000 mg/kg

Skin corrosion/irritation	: Not classified pH: 5.5 – 6.5
Serious eye damage/irritation	: Causes serious eye damage. pH: 5.5 – 6.5
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)

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### Zinc sulphate hexa 23,8% (13986-24-8)

Viscosity, kinematic	Not applicable
Potential adverse human health effects and symptoms	: Harmful if swallowed, Causes serious eye damage.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: Very toxic 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	: Toxic to crustacea. Very toxic to fishes. Inhibition of activated sludge. Toxic to algae. May cause eutrophication at very low concentration. Inhibits photosynthesis of algae. pH shift.
Hazardous to the aquatic environment, short-term (acute)	: Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic)	: Very toxic to aquatic life with long lasting effects.

### Zinc sulphate hexa 23,8% (13986-24-8)

LC50 - Fish [1]	0.33 – 0.78 mg/l (96 h, Pimephales promelas, Static system, Fresh water, Experimental value, Anhydrous form)
EC50 - Crustacea [1]	1.4 – 2.5 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 72h - Algae [1]	3.73 mg/l (Selenastrum capricornutum, Literature study, Monohydrate)

### 12.2. Persistence and degradability

### Zinc sulphate hexa 23,8% (13986-24-8)

Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

### 12.3. Bioaccumulative potential

### Zinc sulphate hexa 23,8% (13986-24-8)

BCF - Fish [1]	0.4 – 7.51 (45 day(s), Channa punctatus, Semi-static system, Fresh water, Experimental value)
BCF - Other aquatic organisms [1]	38 – 28960 (28 day(s), Palaemon elegans, Semi-static system, Salt water, Read-across, Fresh weight)
Bioaccumulative potential	Bioaccumable.

### 12.4. Mobility in soil

### Zinc sulphate hexa 23,8% (13986-24-8)

Surface tension	No data available in the literature
Ecology - soil	No (test) data on mobility of the substance available.

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

No additional information available



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### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: 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. Precipitate/make insoluble. Remove to an authorized dump (Class I). Treat using the best available techniques before discharge into drains or the aquatic environment.
Additional information	: LWCA (the Netherlands): KGA category 05. Can be considered as non hazardous waste according to Directive 2008/98/EC.
Ecology - waste materials	: solid salts and solutions other than those mentioned in 06. 03 11 and 06 03 13. Hazardous waste (91/689/EEC). Precipitate/make insoluble. Recycle/reuse. Remove to an authorized dump (Class I). Treat using the best available techniques before discharge. into drains or the aquatic environment. packaging containing residues of or contaminated by. dangerous substances.
European List of Waste (LoW) code	: 15 01 10* - packaging containing residues of or contaminated by dangerous substances 16 05 06* - laboratory chemicals consisting of or containing dangerous substances including mixtures of laboratory chemicals

### SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

#### 14.1 UN number

UN-No. (ADR)	: UN 3077
UN-No. (IMDG)	: UN 3077
UN-No. (IATA)	: UN 3077
UN-No. (ADN)	: UN 3077
UN-No. (RID)	: UN 3077

#### 14.2. UN proper shipping name

Proper Shipping Name (ADR)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper Shipping Name (IMDG)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper Shipping Name (IATA)	: Environmentally hazardous substance, solid, n.o.s.
Proper Shipping Name (ADN)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper Shipping Name (RID)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Transport document description (ADR)	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS Zinc sulphate), 9, III, (-)
Transport document description (IMDG)	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS Zinc sulphate), 9, III, MARINE POLLUTANT
Transport document description (IATA)	: UN 3077 Environmentally hazardous substance, solid, n.o.s., 9, III
Transport document description (ADN)	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III
Transport document description (RID)	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III

#### 14.3. Transport hazard class(es)

##### ADR

Transport hazard class(es) (ADR)	: 9
Danger labels (ADR)	: 9
	:



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### IMDG

Transport hazard class(es) (IMDG) : 9  
Danger labels (IMDG) :



### IATA

Transport hazard class(es) (IATA) : 9  
Danger labels (IATA) :



### ADN

Transport hazard class(es) (ADN) : 9  
Danger labels (ADN) :



### RID

Transport hazard class(es) (RID) : 9  
Danger labels (RID) :



## 14.4. Packing group

Packing group (ADR) : III  
Packing group (IMDG) : III  
Packing group (IATA) : III  
Packing group (ADN) : III  
Packing group (RID) : III

## 14.5. Environmental hazards

Dangerous for the environment : Yes  
Marine pollutant : Yes  
Other information : No supplementary information available

## 14.6. Special precautions for user

### Overland transport

Transport regulations (ADR) : Subject to the provisions  
Classification code (ADR) : M7  
Special provisions (ADR) : 274, 335, 375, 601  
Limited quantities (ADR) : 5kg  
Excepted quantities (ADR) : E1  
Packing instructions (ADR) : P002, IBC08, LP02, R001  
Special packing provisions (ADR) : PP12, B3  
Mixed packing provisions (ADR) : MP10  
Portable tank and bulk container instructions (ADR) : T1, BK1, BK2, BK3  
Portable tank and bulk container special provisions (ADR) : TP33  
Tank code (ADR) : SGAV, LGBV

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Vehicle for tank carriage : AT  
Transport category (ADR) : 3  
Special provisions for carriage - Packages (ADR) : V13  
Special provisions for carriage - Bulk (ADR) : VC1, VC2  
Special provisions for carriage - Loading, unloading and handling (ADR) : CV13  
Hazard identification number (Kemler No.) : 90  
Orange plates :



Tunnel restriction code (ADR) : -  
EAC code : 2Z

### Transport by sea

Transport regulations (IMDG) : Subject to the provisions  
Special provisions (IMDG) : 274, 335, 966, 967, 969  
Limited quantities (IMDG) : 5 kg  
Excepted quantities (IMDG) : E1  
Packing instructions (IMDG) : LP02, P002  
Special packing provisions (IMDG) : PP12  
IBC packing instructions (IMDG) : IBC08  
IBC special provisions (IMDG) : B3  
Tank instructions (IMDG) : BK1, BK2, BK3, T1  
Tank special provisions (IMDG) : TP33  
EmS-No. (Fire) : F-A  
EmS-No. (Spillage) : S-F  
Stowage category (IMDG) : A  
Stowage and handling (IMDG) : SW23

### Air transport

Transport regulations (IATA) : Subject to the provisions  
PCA Excepted quantities (IATA) : E1  
PCA Limited quantities (IATA) : Y956  
PCA limited quantity max net quantity (IATA) : 30kgG  
PCA packing instructions (IATA) : 956  
PCA max net quantity (IATA) : 400kg  
CAO packing instructions (IATA) : 956  
CAO max net quantity (IATA) : 400kg  
Special provisions (IATA) : A97, A158, A179, A197, A215  
ERG code (IATA) : 9L

### Inland waterway transport

Classification code (ADN) : M7  
Special provisions (ADN) : 274, 335, 375, 601  
Limited quantities (ADN) : 5 kg  
Excepted quantities (ADN) : E1  
Carriage permitted (ADN) : T\* B\*\*  
Equipment required (ADN) : PP, A\*\*\*  
Number of blue cones/lights (ADN) : 0  
Additional requirements/Remarks (ADN) : \* Only in the molten state. \*\* For carriage in bulk see also 7.1.4.1. \*\*\* Only in the case of transport in bulk.

### Rail transport

Transport regulations (RID) : Subject to the provisions  
Classification code (RID) : M7  
Special provisions (RID) : 274, 335, 375, 601  
Limited quantities (RID) : 5kg  
Excepted quantities (RID) : E1  
Packing instructions (RID) : P002, IBC08, LP02, R001  
Special packing provisions (RID) : PP12, B3  
Mixed packing provisions (RID) : MP10

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Portable tank and bulk container instructions (RID)	: T1, BK1, BK2, BK3
Portable tank and bulk container special provisions (RID)	: TP33
Tank codes for RID tanks (RID)	: SGAV, LGBV
Transport category (RID)	: 3
Special provisions for carriage – Packages (RID)	: W13
Special provisions for carriage – Bulk (RID)	: VC1, VC2
Special provisions for carriage - Loading, unloading and handling (RID)	: CW13, CW31
Colis express (express parcels) (RID)	: CE11
Hazard identification number (RID)	: 90

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Zinc sulphate hexa 23,8% is not on the REACH Candidate List

Zinc sulphate hexa 23,8% is not on the REACH Annex XIV List

Zinc sulphate hexa 23,8% is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Zinc sulphate hexa 23,8% is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

VOC content : Not applicable (inorganic)

#### 15.1.2. National regulations

##### Germany

Water hazard class (WGK) : WGK 3, Highly hazardous to water (Classification according to AwSV)

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Technical Instructions on Air Quality Control (TA Luft) : 5.2.1 Total Dust, including Micro Dust

##### Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : The substance is not listed

SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

### 15.2. Chemical safety assessment

A chemical safety assessment has been carried out for the substance or the mixture by the supplier

No chemical safety assessment has been carried out

## SECTION 16: Other information

### Indication of changes:

Complete review of safety data sheet.

### Abbreviations and acronyms:

CLP	CLP = Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
REACH	REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

# Zinc sulphate hexa 23,8%

## SDS = Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Abbreviations and acronyms:	
SDS	SDS = Safety Data Sheet
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
LC50	Median lethal concentration
LD50	Median lethal dose
PNEC	PNEC = Predicted No-Effect Concentration
DMEL	DMEL = Derived Minimal Effect level
DNEL	DNEL = Derived-No Effect Level
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	zPzB = Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Data sources

: ECHA Website: Information on Registered Substances  
Handbook of Chemistry and Physics CRC Press Inc  
Information suppliers  
BIG-database.

# Zinc sulphate hexa 23,8%

## SDS = Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### Other information

: **DISCLAIMER OF LIABILITY** The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

### Full text of H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.