



## SAFETY DATA SHEET

### ZINC SULPHATE HEPTAHYDRATE

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

##### 1.1. Product identifier

Product name	ZINC SULPHATE HEPTAHYDRATE
Product number	Z07
REACH registration number	01-2119474684-27-0003
REACH registration notes	According to REACH Annex V, paragraph 6; the hydrates of a substance are covered by the registration of the anhydrous material.
CAS number	7446-20-0
EU index number	030-006-00-9
EC number	231-793-3

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

Identified uses	Fertilisers. Intermediates. Laboratory chemicals. Chemical Processing Aids. Pharmaceutical substance. Surface active agents (surfactants). Sealant. Lubricants and lubricant additives. A complete list of uses are provided in the annex to this SDS. Some grades of this substance are available for feed/food use; Feed additive. (3b604).
Uses advised against	None.

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

Supplier	Norkem Limited, Norkem House, Bexton Lane, Knutsford, Cheshire, WA16 9FB. UK. T: + 44 (0)1565 755550 F: + 44 (0)1565 755496 datasheet@norkem.com
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##### 1.4. Emergency telephone number

Emergency telephone	T: 01270 502891 (English-language only response)
National Poison Center (Turkey only)	114

#### SECTION 2: Hazards identification

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

###### Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Acute Tox. 4 - H302 Eye Dam. 1 - H318
Environmental hazards	Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410
Environmental	Acute M-factor = 1. Chronic M-factor = 1.

## ZINC SULPHATE HEPTAHYDRATE

### 2.2. Label elements

**EC number** 231-793-3

**Pictogram**



**Signal word** Danger

**Hazard statements** H302 Harmful if swallowed.  
H318 Causes serious eye damage.  
H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statements** P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P501 Dispose of contents/ container in accordance with national regulations.

**Supplementary precautionary statements** P264 Wash contaminated skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P310 Immediately call a POISON CENTER/ doctor.  
P330 Rinse mouth.  
P391 Collect spillage.

### 2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

**Product name** ZINC SULPHATE HEPTAHYDRATE

**REACH registration number** 01-2119474684-27-0003

**REACH registration notes** According to REACH Annex V, paragraph 6; the hydrates of a substance are covered by the registration of the anhydrous material.

**EU index number** 030-006-00-9

**CAS number** 7446-20-0

**EC number** 231-793-3

**Composition comments** Purity >90, <100% w/w

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

**Inhalation** Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.

**Ingestion** Do not induce vomiting. Never give anything by mouth to an unconscious person. Remove affected person from source of contamination. Give plenty of water to drink. Get medical attention immediately. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

## ZINC SULPHATE HEPTAHYDRATE

<b>Skin contact</b>	Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention promptly if symptoms occur after washing.
<b>Eye contact</b>	Remove affected person from source of contamination. Rinse with water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

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

<b>Inhalation</b>	Coughing. Sore throat.
<b>Ingestion</b>	Stomach pain. Nausea, vomiting.
<b>Skin contact</b>	Redness.
<b>Eye contact</b>	Redness. Pain.

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

<b>Notes for the doctor</b>	No specific recommendations. If in doubt, get medical attention promptly.
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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	Use fire-extinguishing media suitable for the surrounding fire. Water spray, foam, dry powder or carbon dioxide.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.

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

<b>Specific hazards</b>	The product is non-combustible.
<b>Hazardous combustion products</b>	Sulphurous gases (SO <sub>x</sub> ). Zinc Oxide.

### 5.3. Advice for firefighters

<b>Protective actions during firefighting</b>	Control run-off water by containing and keeping it out of sewers and watercourses.
<b>Special protective equipment for firefighters</b>	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

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

<b>Personal precautions</b>	Avoid generation and spreading of dust. Avoid inhalation of dust. Provide adequate ventilation. For personal protection, see Section 8.
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**For non-emergency personnel** Keep unnecessary and unprotected personnel away from the spillage.

### 6.2. Environmental precautions

<b>Environmental precautions</b>	Do not discharge into drains or watercourses or onto the ground.
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### 6.3. Methods and material for containment and cleaning up

<b>Methods for cleaning up</b>	Avoid the spillage or runoff entering drains, sewers or watercourses. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. For waste disposal, see Section 13.
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## ZINC SULPHATE HEPTAHYDRATE

### 6.4. Reference to other sections

**Reference to other sections** Wear protective clothing as described in Section 8 of this safety data sheet. See Section 11 for additional information on health hazards.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Usage precautions** Avoid spilling. Avoid contact with skin and eyes. Avoid inhalation of dust. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure.

**Advice on general occupational hygiene** Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Take off contaminated clothing and wash it before reuse. Use appropriate skin cream to prevent drying of skin.

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

**Storage precautions** Store in tightly-closed, original container in a dry, cool and well-ventilated place.

#### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2. For further information, see attached Exposure Scenario.

### SECTION 8: Exposure Controls/personal protection

#### 8.1. Control parameters

**DNEL** Workers - Inhalation; Long term systemic effects: 1 mg/m<sup>3</sup>  
 Workers - Dermal; Long term systemic effects: 8.3 mg/kg/day  
 General population - Oral; Long term systemic effects: 0.83 mg/kg/day  
 General population - Inhalation; Long term systemic effects: 1.3 mg/m<sup>3</sup>  
 General population - Dermal; Long term systemic effects: 8.3 mg/kg/day  
 The units are expressed in 'mg/µg' of:  
 Zinc.

**PNEC** - Fresh water; 0.0206 mg/l  
 - Marine water; 0.0061 mg/l  
 - Sediment (Freshwater); 235.6\* mg/kg  
 - Sediment (Marinewater); 113\* mg/kg  
 - Soil; 106.8\*\* mg/kg  
 - STP; 0.0052\*\*\* mg/l  
 The units are expressed in 'mg/µg' of:  
 Zinc.  
 These PNECs are added value PNECs- they are to be added to the natural background levels of:  
 Zinc.  
 - in the appropriate compartments (e.g. soils, sediments).  
 (\*) A generic bioavailability factor of 0.5 is applied by default, according to the EU risk assessment (ECB 2008).  
 (\*\*) by default this value was multiplied by '3' to take into account "lab-to-field" differences in toxicity.  
 (STP) The PNEC for STP was derived by applying an assessment factor to the lowest relevant toxicity value (5.2mg Zn/l). (Dutka et al., 1983)

#### 8.2. Exposure controls

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<b>Appropriate engineering controls</b>	<p>Technical conditions and measures at process level (source) to prevent release</p> <ul style="list-style-type: none"> <li>• Local exhaust ventilation on mixing tanks, furnaces and other work areas with potential dust generation, dust capturing and removal techniques (high efficiency 90-95%)</li> <li>• Process enclosures where relevant and possible</li> <li>• Containment of liquid volumes in sumps to collect/prevent accidental spillage</li> </ul> <p>Technical conditions and measures to control dispersion from source towards the worker</p> <ul style="list-style-type: none"> <li>• Local exhaust ventilation systems (generic LEV (84% efficiency) worst case, higher efficiencies (90-95% are usual) and process enclosures are generally applied</li> <li>• Cyclones/filters (for minimizing dust emissions): efficiency 70%-90% (cyclones); dust filters (50-80%)</li> <li>• Dust control: Zn in dust needs to be measured in the workplace air (static or individual) according to national regulations</li> <li>• Special care for the general establishment and maintenance of a clean working environment by cleaning of process equipment and workshop.</li> </ul>
<b>Eye/face protection</b>	The following protection should be worn: Dust-resistant, chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.
<b>Hand protection</b>	<p>Wear protective gloves. To protect hands from chemicals, gloves should comply with European Standard EN374. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. For exposure up to 8 hours, wear gloves made of the following material: Rubber (natural, latex). Nitrile rubber. Butyl rubber. Chloroprene rubber.</p> <p>( Thickness: 0.5 mm )</p> <p>Nitrile rubber.</p> <p>( Thickness: 0.35 mm )</p>
<b>Other skin and body protection</b>	Provide eyewash station and safety shower. Wear appropriate clothing to prevent skin contamination. Chemical resistant safety shoes. Protective clothing: DIN EN 13034 (liquid), EN ISO 13982-1 (solid).
<b>Respiratory protection</b>	Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit. Particulate filter, type P2. / Particulate filter, type P3. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140. Particulate filters should comply with European Standard EN143.
<b>Environmental exposure controls</b>	<p>Avoid releasing into the environment. Do not discharge into drains or watercourses or onto the ground. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</p> <ul style="list-style-type: none"> <li>• At industrial scale, the waste waters will be treated in the on-site waste water treatment. Techniques that can be applied to prevent releases to water (if applicable) e.g.: chemical precipitation, sedimentation and filtration (efficiency 90-99.98%).</li> <li>• Air emissions are controlled by use filters and/or other air emission abatement devices e.g. fabric (or bag) filters (up to 99% efficiency), wet scrubbers (50-99% efficiency). This may create a general negative pressure in the laboratory.</li> <li>• At professional scale, the emissions are treated usually by STP. Professional services will be used for treating waste streams e.g. for the recovery of metallic solids (for recycling), and for the recovery of e.g. acid solutions containing the substance.</li> </ul>

### SECTION 9: Physical and Chemical Properties

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

<b>Appearance</b>	Dusty powder.
<b>Colour</b>	White.
<b>Odour</b>	Odourless.

## ZINC SULPHATE HEPTAHYDRATE

<b>pH</b>	Not applicable.
<b>Melting point</b>	56°C / 196°C ( Air. / Nitrogen. )
<b>Initial boiling point and range</b>	Scientifically unjustified. Will decompose at temperatures exceeding 200°C.
<b>Flash point</b>	Not relevant. Substance is inorganic.
<b>Evaporation rate</b>	Not relevant.
<b>Flammability (solid, gas)</b>	The product has no flammability, explosive or self-inflammability properties.
<b>Upper/lower flammability or explosive limits</b>	Not applicable.
<b>Vapour pressure</b>	Not relevant.
<b>Vapour density</b>	Not relevant.
<b>Relative density</b>	1.98 @ 20°C
<b>Solubility(ies)</b>	Soluble in water. 208 g/l water @ 20°C
<b>Partition coefficient</b>	Not relevant. Substance is inorganic.
<b>Auto-ignition temperature</b>	Not relevant.
<b>Decomposition Temperature</b>	200°C / 196°C Nitrogen. / Air.
<b>Viscosity</b>	Not relevant.
<b>Explosive properties</b>	Not considered to be explosive.
<b>Oxidising properties</b>	Does not meet the criteria for classification as oxidising.

### 9.2. Other information

**Molecular weight** 161.4716 (H<sub>2</sub>O<sub>4</sub>S.Zn)

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity** Reactions with water yield: Sulphuric acid (H<sub>2</sub>SO<sub>4</sub>).

### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures and when used as recommended.

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Not known. Will not polymerise.

### 10.4. Conditions to avoid

**Conditions to avoid** Avoid heat. Moisture.

### 10.5. Incompatible materials

**Materials to avoid** Alkalis, carbonates and hydroxides. Borax. Silver protein and tannins. Strontium salts. Lead. Calcium.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Sulphurous gases (SO<sub>x</sub>). Oxides of the following substances: Zinc.

## SECTION 11: Toxicological information

## ZINC SULPHATE HEPTAHYDRATE

### 11.1. Information on toxicological effects

#### Acute toxicity - oral

**Notes (oral LD<sub>50</sub>)** Very soluble zinc sulphate (monohydrate, hexahydrate and heptahydrate) has LD50 oral values ranging from 574 to 2,949 mg/kg bw, 862 to 4,429 mg/kg bw and 920 to 4,725 mg/kg bw, respectively for the three forms of zinc sulphate. Tests conducted to standard protocols Litton (Bionetics, 1974, Courtois et al., 1978.)

**ATE oral (mg/kg)** 500.0

#### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** LD<sub>50</sub> > 2000 mg/kg, Dermal, Rat . Test method(s): OECD 402. (Van Huygevoort 1999)

#### Acute toxicity - inhalation

**Notes (inhalation LC<sub>50</sub>)** Effects of inhalation exposure to zinc sulphate were limited to pulmonary effects only.

#### Skin corrosion/irritation

**Animal data** Not irritating. Primary dermal irritation index: 0 . Erythema/eschar score: No erythema (0). Oedema score: No oedema (0). Not classified. Test method(s): OECD 404. (Van Huygevoort 1999)

#### Serious eye damage/irritation

**Serious eye damage/irritation** Irritating. Test method(s): OECD 405. (Van Huygevoort 1999)

#### Skin sensitisation

**Skin sensitisation** Patch test - Mouse: Not sensitising. (Van Huygevoort, 1999 i, Ikarashi et al, 1992)

#### Germ cell mutagenicity

**Genotoxicity - in vitro** Gene mutation: Negative. In vitro genotoxicity studies indicate that zinc compounds do not have genotoxic activity [Zinc CSR(s), 2010]. This conclusion is in line with those achieved by other regulatory reviews of the genotoxicity of zinc compounds (WHO, 2001; EU RAR, 2004, MAK, 2009).

**Genotoxicity - in vivo** Chromosome aberration: Negative. In vivo genotoxicity studies indicate that zinc compounds do not have genotoxic activity [Zinc CSR(s), 2010]. This conclusion is in line with those achieved by other regulatory reviews of the genotoxicity of zinc compounds (WHO, 2001; EU RAR, 2004, MAK, 2009).

#### Carcinogenicity

**Carcinogenicity** No experimental or epidemiological evidence exists to justify classification of zinc compounds for carcinogenic activity (based on cross-reading between Zn compounds; no classification for carcinogenicity required) (Chemical Safety report (CSR), 2010).

#### Reproductive toxicity

**Reproductive toxicity - fertility** No experimental or epidemiological evidence exists to justify classification of zinc compounds for carcinogenic activity (based on cross-reading between Zn compounds; no classification for carcinogenicity required) (Chemical Safety report (CSR), 2010).

#### Specific target organ toxicity - single exposure

**STOT - single exposure** No experimental or epidemiological sufficient evidence for specific target organ toxicity (single exposure) (based on cross-reading from ZnO; no classification for target organ toxicity (single exposure: STOT-SE) required) (Heydon and Kagan, 1990; Gordon et al., 1992; Mueller and Seger, 1985 [Cited in Chemical Safety report (CSR) zinc sulphate. 2010])).

#### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** No experimental or epidemiological sufficient evidence for specific target organ toxicity (repeated exposure) (no classification for specific target organ toxicity (repeated exposure: STOT-RE) required) (Lam et al, 1985, 1988; Conner et al. ,1988 [Cited in Chemical Safety report (CSR) for zinc(s). 2010])).

## ZINC SULPHATE HEPTAHYDRATE

### Aspiration hazard

**Aspiration hazard** No data available.

### SECTION 12: Ecological Information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

#### 12.1. Toxicity

##### Acute aquatic toxicity

**LE(C)<sub>50</sub>** 0.1 < L(E)C<sub>50</sub> ≤ 1

##### Acute toxicity

The Acute aquatic toxicity database on zinc contains data on 11 standard species obtained under standard testing conditions at different pH and hardness. The full analysis of these data is given in the CSR.

The reference values for acute aquatic toxicity, based on the lowest observed EC<sub>50</sub> values of the corresponding databases at different pH and expressed as Zn<sup>++</sup> ion concentration are:

- for pH <7: 0.413 mg Zn<sup>++</sup>/l (48 hr - Ceriodaphnia dubia test according to US EPA 821-R-02-012 standard test protocol; reference: Hyne et al 2005)
- for pH >7-8.5: 0.136 mg Zn<sup>++</sup>/l (72 hr - Selenastrum capricornutum (=Pseudokirchneriella subcapitata) test according to OECD 201 standard protocol; reference: Van Ginneken, 1994)

After applying the molecular weight correction (transformation/dissolution testing is not relevant since this zinc compound is readily soluble), the specific reference values for acute aquatic toxicity of the different zinc sulphates are:

For zinc monohydrate (a ZnSO<sub>4</sub>.H<sub>2</sub>O/Zn molecular weight ratio of 2.74):

- for pH <7: 1.13 mg Zn/l (based on 48 hr Ceriodaphnia dubia test cfr above)
- for pH >7-8.5: 3.73 mg Zn/l (based on 72 hr Selenastrum capricornutum test cfr above)

For zinc hexahydrate (a ZnSO<sub>4</sub>.6H<sub>2</sub>O/Zn molecular weight ratio of 4.12):

- for pH <7: 1.70 mg Zn/l (based on 48 hr Ceriodaphnia dubia test cfr above)
- for pH >7-8.5: 0.56 mg Zn/l (based on 72 hr Selenastrum capricornutum test cfr above)

For zinc heptahydrate (a ZnSO<sub>4</sub>.7H<sub>2</sub>O/Zn molecular weight ratio of 4.4):

- for pH <7: 1.82 mg Zn/l (based on 48 hr Ceriodaphnia dubia test cfr above)
- for pH >7-8.5: 0.60 mg Zn/l (based on 72 hr Selenastrum capricornutum test cfr above)

M-factor: 1

##### Chronic toxicity

**CHRONIC AQUATIC TOXICITY:**

The chronic freshwater aquatic toxicity database on zinc contains high quality chronic NOEC/EC<sub>10</sub> values on 23 species (8 taxonomic groups) obtained under a variety of conditions.

The chronic marine-water aquatic toxicity database on zinc contains high quality chronic NOEC/EC<sub>10</sub> values on 39 species (9 taxonomic groups) obtained under a variety of conditions.

These data, outlined in the CSR, were compiled in a species sensitivity distribution, from which the PNECs for freshwater and marine-water were derived (expressed as Zn<sup>+2</sup>ion concentration).



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<b>Chronic toxicity - Freshwater sediment</b>	<p><b>SEDIMENT TOXICITY:</b></p> <p>The chronic toxicity of zinc to sediment organisms in the freshwater was assessed based on a database containing high quality chronic NOEC/EC10 values on 7 benthic species obtained under a variety of conditions. These data, outlined in the CSR, were compiled in a species sensitivity distribution, from which the PNEC was derived (expressed as total Zn contained in the sediment).</p> <p>For marine sediments, a PNEC was derived using the equilibrium partitioning approach.</p>
<b>Chronic toxicity - Terrestrial</b>	<p><b>SOIL TOXICITY:</b></p> <p>The chronic toxicity of zinc to soil organisms was assessed based on a database containing high quality chronic NOEC/EC10 values on 18 plant species, 8 invertebrate species and 17 microbial processes, obtained under a variety of conditions. These data, outlined in the CSR, were compiled in a species sensitivity distribution, from which the PNEC was derived (expressed as total Zn contained in the soil).</p>
<b>Toxicity - Sewage Treatment Plant</b>	<p>(STP) The PNEC for STP was derived by applying an assessment factor to the lowest relevant toxicity value (5.2mg Zn/l). (Dutka et al., 1983)</p>

### 12.2. Persistence and degradability

<b>Persistence and degradability</b>	<p>Zinc is an element, and as such the criterion "persistence" is not relevant for the metal and its inorganic compounds in a way as it is applied to organic substances. An analysis on the removal of zinc from the water column has been presented as a surrogate for persistence. The rapid removal of zinc from the water column is documented in the CSR. So, zinc and zinc compounds do not meet this criterion, neither.</p>
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### 12.3. Bioaccumulative potential

<b>Bioaccumulative potential</b>	<p>The product is not bioaccumulating. Zinc is a natural, essential element, which is needed for the optimal growth and development of all living organisms, including man. All living organisms have homeostasis mechanisms that actively regulate zinc uptake and absorption/excretion from the body; due to this regulation, zinc and zinc compounds do not bio-accumulate or bio-magnify.</p>
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<b>Partition coefficient</b>	Not relevant. Substance is inorganic.
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### 12.4. Mobility in soil

<b>Mobility</b>	<p>For zinc (like for other metals) the transport and distribution over the different environmental compartments e.g. the water (dissolved fraction, fraction bound to suspended matter), soil (fraction bound or complexed to the soil particles, fraction in the soil pore water,...) is described and quantified by the metal partition coefficients between these different fractions. In the CSR, a solids-water partitioning coefficient of 158.5 l/kg (log value 2.2) was applied for zinc in soils (CSR zinc 2010).</p>
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### 12.5. Results of PBT and vPvB assessment

<b>Results of PBT and vPvB assessment</b>	This substance is not classified as PBT or vPvB according to current EU criteria.
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### 12.6. Other adverse effects

<b>Other adverse effects</b>	None known.
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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

## ZINC SULPHATE HEPTAHYDRATE

<b>General information</b>	Waste should be treated as controlled waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
<b>Disposal methods</b>	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions. Waste catalogue number and code must be decided by the end user based on the actual use of the product.

### SECTION 14: Transport information

#### 14.1. UN number

UN No. (ADR/RID)	3077
UN No. (IMDG)	3077
UN No. (ICAO)	3077

#### 14.2. UN proper shipping name

UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Sulphate Heptahydrate), 9, III, (E)

**Proper shipping name (ADR/RID)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

**Proper shipping name (IMDG)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

**Proper shipping name (ICAO)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

**Proper shipping name (ADN)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

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

ADR/RID class	9
ADR/RID label	9
IMDG class	9
ICAO class/division	9

#### Transport labels



#### 14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ICAO packing group	III

#### 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



#### 14.6. Special precautions for user

EmS	F-A, S-F
Emergency Action Code	2Z

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**Hazard Identification Number** 90  
(ADR/RID)

**Tunnel restriction code** (E)

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

**Transport in bulk according to** Not applicable.

**Annex II of MARPOL 73/78  
and the IBC Code**

## SECTION 15: Regulatory information

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

**EU legislation** Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).  
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

**Guidance** Introduction to Local Exhaust Ventilation HS(G)37.  
Workplace Exposure Limits EH40.

### 15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

## SECTION 16: Other information

**General information** The following information is provided to conform with article 13 of the EC Directive on Packaging and Packaging Waste 94/62/EC:

- Wherever possible we use returnable packaging and pallets. Details of these are on our Sales Contracts
- For any non-returnable packaging the cost of disposal is at your expense, but we do have a list of reprocessors available
- In most cases, but not all, we are able to supply products in returnable packaging but the additional cost of this will be for the customer's expense. Please ask for details with your specific requirements
- Any products supplied in returnable packaging is clearly marked to this effect.

**Key literature references and sources for data** Chemical safety report.

**Revision comments** NOTE: Lines within the margin indicate significant changes from the previous revision.

**Revision date** 23/06/2017

**Revision** 7

**Supersedes date** 27/01/2017

**SDS status** For further information, see attached Exposure Scenario.

**Hazard statements in full** 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.

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.