

# SAFETY DATA SHEET

## ZN+S

This safety data sheet complies with the requirements of:  
Regulation (EC) No. 453/2010 and Regulation (EC) No. 1272/2008



SDS # : NP-0082-1-A  
Revision date: 2018-07-19  
Format: EU  
Version 1.01

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

Product Code(s) NP-0082-1-A

Product Name ZN+S

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

Recommended Use: A fertilizer with micronutrients for use in agriculture and horticulture

Restrictions on use Use as recommended by the label.

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

**Manufacturer**  
FMC Agro Limited  
Rectors Lane  
Pentre  
Flintshire  
CH5 2DH  
United Kingdom  
Tel: + 44 (0) 1244 537370  
E-mail: fmc.agro.uk@fmc.com

For further information, please contact:

**Contact point**  
Tel: +44(0)1244 537370  
Email: fmc.agro.uk@fmc.com

#### 1.4. Emergency telephone number

Emergency telephone Tel: +44(0)1244 537370 (Office hours only)

### Section 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the substance or mixture *Regulation (EC) No 1272/2008*

Serious eye damage/eye irritation	Category 1 (H318)
Chronic aquatic toxicity	Category 1 (H410)

#### 2.2. Label elements

Hazard pictograms



**Signal Word**

Danger

**Hazard Statements**

H318 - Causes serious eye damage

H410 - Very toxic to aquatic life with long lasting effects

**Precautionary Statements**

P264 - Wash hands thoroughly after handling

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

P501: Dispose of contents/container as hazardous waste.

**2.3. Other hazards**

This product is not identified as a PBT/vPvB substance.

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substances**

The product is a mixture, not a substance.

**3.2 Mixture containing the following hazardous ingredients:**

Chemical name	EC-No	CAS-No	Weight percent	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
ethane-1,2-diol	203-473-3	107-21-1	1-10	Acute Tox. 4 (H302) STOT RE 2: (H373)	01-2119456816-28-XXXX
Zinc sulfate	231-793-3	7733-02-0	10-30	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	01-2119474684-27-XXXX

### Section 4: FIRST AID MEASURES

**4.1. Description of first aid measures****Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Transfer to hospital for specialist examination.

**Skin Contact**

Immediately remove all stained or splashed clothing that is not adhering to the skin. Wash off immediately with plenty of water for at least 15 minutes. Transfer to hospital if there are burns or symptoms of poisoning.

**Inhalation**

Remove person from exposure ensuring one's own safety while doing so. Call a doctor or poison control centre immediately.

**Ingestion**

Rinse mouth. Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention.

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

Skin contact: Severe burns may occur. Progressive ulceration will occur if treatment is not immediate.

Eye contact: Corneal burns may occur. May cause permanent damage.

Ingestion: Corrosive burns may appear around the lips. Blood may be vomited. There may be difficulty swallowing.

Inhalation: There may be shortness of breath with a burning sensation in the throat.  
Exposure may cause coughing or wheezing.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

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

**Indication of immediate medical attention and special treatment needed, if necessary**

Eye bathing equipment should be available on the premises.

### **Section 5: FIREFIGHTING MEASURES**

#### **5.1. Extinguishing media**

**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers / tanks with water spray.

**Unsuitable extinguishing media**

No information available

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

Thermal decomposition can lead to release of irritating and toxic gases and vapours.

#### **5.3. Advice for firefighters**

As in any fire, wear self-contained breathing apparatus and full protective gear. Wear protective clothing to prevent contact with skin and eyes.

### **Section 6: ACCIDENTAL RELEASE MEASURES**

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

**Personal Precautions**

In case of spill, avoid contact. Isolate area and keep out animals and unprotected persons. Stop leak if you can do it without risk. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection see section 8. Keep people away from and upwind of spill/leak.

For further clean-up instructions, call Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

**For emergency responders**

Use personal protection recommended in Section 8.

#### **6.2. Environmental precautions**

Do not discharge into drains or rivers. Contain the spillage using bunding. Accidental release into water courses must be alerted to the appropriate regulatory body.

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

**Methods for Containment**

Clean-up should be dealt with only by qualified personnel familiar with the specific substance. Contain spills with earth or sand or inert absorbent.

**Methods for cleaning up**

Sweep up and shovel into suitable containers for disposal. Surface water drains within close vicinity of the spill should be covered. Absorb into dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method. Refer to section 13 of SDS for suitable method of disposal.

#### **6.4. Reference to other sections**

See section 8 for more information. See section 13 for more information.

### **Section 7: HANDLING AND STORAGE**

**7.1. Precautions for safe handling****Handling**

Avoid contact by using personal protective equipment. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Do not handle in a confined space. Avoid the formation or spread of mists in the air.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities****Storage**

Protect from freezing. Store above 5°C. Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from direct sunlight. Keep away from heat. Keep out of reach of children and animals. Keep away from food, drink and animal feedingstuffs. Store rooms or warehouses should be made of non-combustible materials with impermeable floors.

**7.3. Specific end use(s)****Specific Use(s)**

No data available.

**Risk Management Methods (RMM)**

The information required is contained in this Safety Data Sheet.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1. Control parameters**

Chemical name	European Union	The United Kingdom	France	Spain	Germany
ethane-1,2-diol 107-21-1	TWA 20 ppm TWA 52 mg/m <sup>3</sup> STEL 40 ppm STEL 104 mg/m <sup>3</sup> S*	STEL 40 ppm STEL 104 mg/m <sup>3</sup> STEL 30 mg/m <sup>3</sup> TWA 10 mg/m <sup>3</sup> TWA 20 ppm TWA 52 mg/m <sup>3</sup> Skin	TWA 20 ppm TWA 52 mg/m <sup>3</sup> STEL 40 ppm STEL 104 mg/m <sup>3</sup> P*	TWA 20 ppm TWA 52 mg/m <sup>3</sup> STEL 40 ppm STEL 104 mg/m <sup>3</sup> S*	-
Chemical name	Italy	Portugal	The Netherlands	Finland	Denmark
ethane-1,2-diol 107-21-1	TWA 20 ppm TWA 52 mg/m <sup>3</sup> STEL 40 ppm STEL 104 mg/m <sup>3</sup> Pelle*	TWA 20 ppm TWA 52 mg/m <sup>3</sup> STEL 40 ppm STEL 104 mg/m <sup>3</sup> Ceiling 100 mg/m <sup>3</sup> C(A4) P*	Huid* STEL 104 mg/m <sup>3</sup> TWA 52 mg/m <sup>3</sup> TWA 10 mg/m <sup>3</sup>	TWA 20 ppm TWA 50 mg/m <sup>3</sup> STEL 40 ppm STEL 100 mg/m <sup>3</sup> iho*	TWA 10 ppm TWA 26 mg/m <sup>3</sup> TWA 10 mg/m <sup>3</sup> H*
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
ethane-1,2-diol 107-21-1	H* STEL 20 ppm STEL 52 mg/m <sup>3</sup> TWA 10 ppm TWA 26 mg/m <sup>3</sup>	SS-C** H* TWA 10 ppm TWA 26 mg/m <sup>3</sup> STEL 20 ppm STEL 52 mg/m <sup>3</sup>	TWA 15 mg/m <sup>3</sup> STEL 50 mg/m <sup>3</sup>	TWA 20 mg/m <sup>3</sup> TWA 52 ppm TWA 52 mg/m <sup>3</sup> S* STEL 104 mg/m <sup>3</sup> STEL 40 ppm	TWA 10 mg/m <sup>3</sup> TWA 20 ppm TWA 52 mg/m <sup>3</sup> STEL 40 ppm STEL 104 mg/m <sup>3</sup> Skin

**Derived No Effect Level (DNEL)** No information available.

**Predicted No Effect Concentration (PNEC)** No information available.

**8.2. Exposure controls****Engineering measures**

Ensure adequate ventilation, especially in confined areas. The floor of the storage room must be impermeable to prevent the escape of liquids.

**Personal protective equipment****Eye/Face Protection**

Tightly fitting safety goggles. Maintain eye wash fountain and quick-drench facilities in work

area.

<b>Hand Protection</b>	Gloves (acid resistant).
<b>Skin and Body Protection</b>	Acid-resistant protective clothing.
<b>Respiratory Protection</b>	Not required under normal use.

**Environmental exposure controls** Refer to specific Member State legislation for requirements under Community environmental legislation.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

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

<b>Physical State</b>	Liquid
<b>Appearance</b>	No information available
<b>Odour</b>	Characteristic
<b>Colour</b>	Brown
<b>Odour threshold</b>	No information available
<b>pH</b>	~2.1
<b>Melting point/freezing point</b>	No information available
<b>Boiling point/boiling range</b>	No information available
<b>Flash point</b>	No information available
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Flammability Limit in Air</b>	
Upper flammability limit:	No information available
Lower flammability limit	No information available
<b>Vapour pressure</b>	No information available
<b>Vapour density</b>	No information available
<b>Specific gravity</b>	1.33 - 1.35
<b>Water solubility</b>	Soluble in water
<b>Solubility in other solvents</b>	No information available
<b>Partition coefficient</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity, kinematic</b>	No information available
<b>Viscosity, dynamic</b>	No information available
<b>Explosive properties</b>	No information available
<b>Oxidising properties</b>	Non-oxidizing (by EC criteria)

### 9.2. Other information

<b>Softening point</b>	No information available
<b>Molecular weight</b>	No information available
<b>VOC content (%)</b>	No information available
<b>Density</b>	No information available
<b>Bulk density</b>	No information available
<b>K<sub>st</sub></b>	No information available

## Section 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

Stable under recommended storage conditions

### 10.2. Chemical stability

Stable under recommended storage conditions.

#### Explosion data

**Sensitivity to Mechanical Impact** No information available.  
**Sensitivity to Static Discharge** No information available.

**10.3. Possibility of hazardous reactions****Hazardous polymerisation**

Hazardous polymerization does not occur.

**Hazardous reactions**

None under normal processing. Decomposition may occur on exposure to conditions or materials listed below.

**10.4. Conditions to avoid**

Heat.

**10.5. Incompatible materials**

Strong oxidising agents, Strong bases.

**10.6. Hazardous decomposition products**

May emit toxic fumes under fire conditions.

## Section 11: TOXICOLOGICAL INFORMATION

**11.1. Information on toxicological effects****Acute toxicity****Product Information**

Product does not present an acute toxicity hazard based on known or supplied information.

**LD50 Oral** > 5000 mg/kg (rat) (Calculated Estimated Acute Toxicity - EAT)

Chemical name	LD50 Oral	LD50 Dermal	Inhalation LC50
Zinc sulfate	1710 mg/kg ( Rat )	>2000mg/kg (Rat)	

**Skin corrosion/irritation** No information available.  
**Serious eye damage/eye irritation** No information available.  
**Sensitisation** No information available  
**Mutagenicity** No information available.  
**Carcinogenicity** No information available.

**Reproductive toxicity** No information available.  
**STOT - single exposure** No information available.  
**STOT - repeated exposure** No information available.

**Symptoms**

Skin contact: Severe burns may occur. Progressive ulceration will occur if treatment is not immediate.

Eye contact: Corneal burns may occur. May cause permanent damage.

Ingestion: Corrosive burns may appear around the lips. Blood may be vomited. There may be difficulty swallowing.

Inhalation: There may be shortness of breath with a burning sensation in the throat.  
Exposure may cause coughing or wheezing.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

**Aspiration hazard**

No information available.

## Section 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

<b>Ecotoxicity</b>	RAINBOW TROUT ( <i>Oncorhynchus mykiss</i> ):	96H LC50 = 0.778 (calculated) mg/L
	DAPHNIDS ( <i>Daphnia magna</i> ):	48H EC50 = 3.93 (calculated) mg/L
	ALGAE ( <i>Pseudokirchneriella subcapitata</i> ):	72H IC50 = 1.31 (calculated) mg/L

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Zinc sulfate	72 h EC50: = 0.056 mg/L ( <i>Pseudokirchneriella subcapitata</i> ) static 72 h EC50: = 64.8 mg/L ( <i>Chlorella vulgaris</i> ) 96 h EC50: = 2.4 mg/L ( <i>Chlorella vulgaris</i> )	96 h LC50: = 0.162 mg/L ( <i>Oncorhynchus mykiss</i> ) flow-through 96 h LC50: 0.03 - 0.05 mg/L ( <i>Oncorhynchus mykiss</i> ) semi-static 96 h LC50: 0.34 - 0.93 mg/L ( <i>Oncorhynchus mykiss</i> ) static 96 h LC50: 0.23 - 0.48 mg/L ( <i>Pimephales promelas</i> ) 96 h LC50: 49.23 - 64.16 mg/L ( <i>Poecilia reticulata</i> ) semi-static 96 h LC50: 16.85 - 27.18 mg/L ( <i>Cyprinus carpio</i> ) static 96 h LC50: 3 - 4.6 mg/L ( <i>Lepomis macrochirus</i> ) flow-through 96 h LC50: = 0.63 mg/L ( <i>Poecilia reticulata</i> ) 96 h LC50: 0.48 - 1.72 mg/L ( <i>Poecilia reticulata</i> ) static 96 h LC50: = 0.06 mg/L ( <i>Pimephales promelas</i> ) static 96 h LC50: 3.55 - 6.32 mg/L ( <i>Lepomis macrochirus</i> ) static 96 h LC50: 0.218 - 0.42 mg/L ( <i>Pimephales promelas</i> ) flow-through 96 h LC50: 0.168 - 0.25 mg/L ( <i>Pimephales promelas</i> ) semi-static 96 h LC50: = 0.15 mg/L ( <i>Cyprinus carpio</i> ) semi-static	48 h EC50: = 0.75 mg/L ( <i>Daphnia magna</i> ) 48 h EC50: 0.538 - 0.908 mg/L ( <i>Daphnia magna</i> ) Static

### 12.2. Persistence and degradability

No information available.

### 12.3. Bioaccumulative potential

No information available.

### 12.4. Mobility in soil

#### Mobility in soil

No information available.

#### Mobility

Soluble in water.

### 12.5. Results of PBT and vPvB assessment

This product is not identified as a PBT/vPvB substance.

### 12.6. Other adverse effects

Toxic to aquatic organisms

## Section 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

<b>Waste from residues / unused products</b>	Transfer to a suitable container and arrange for collection by specialised disposal company. Do not contaminate ponds, waterways or ditches with chemical or used containers. Do not discharge to sewer systems.
<b>Contaminated Packaging</b>	Clean container with water. Dispose of rinse water in accordance with local and national guidelines. Empty containers should be taken to an approved waste handling site for recycling or disposal. Containers must be disposed of in accordance with local regulations. Refer to the product label for container disposal instructions.
<b>EWC Waste Disposal No</b>	02 01 08
<b>OTHER INFORMATION</b>	NOTE : The user's attention is drawn to the possible existence of specific European, national or local regulations regarding disposal.

## Section 14: TRANSPORT INFORMATION

### IMDG/IMO

<b>14.1 UN/ID no</b>	UN3082
<b>14.2 Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ZINC SULPHATE)
<b>14.3 Hazard class</b>	9
<b>14.4 Packing Group</b>	III
<b>14.5 Marine Pollutant</b>	Yes
<b>Environmental Hazard</b>	Yes
<b>14.6 Special Provisions</b>	No special precautions. Tunnel code: E Transport category: 3
<b>14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code</b>	The product is not transported in bulk containers.

### RID

<b>14.1 UN/ID no</b>	UN3082
<b>14.2 Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ZINC SULPHATE)
<b>14.3 Hazard class</b>	9
<b>14.4 Packing Group</b>	III
<b>14.5 Environmental Hazard</b>	Yes
<b>14.6 Special Provisions</b>	No special precautions. Tunnel code: E Transport category: 3

### ADR/RID

<b>14.1 UN/ID no</b>	UN3082
<b>14.2 Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ZINC SULPHATE)
<b>14.3 Hazard class</b>	9
<b>14.4 Packing Group</b>	III
<b>14.5 Environmental Hazard</b>	Yes
<b>14.6 Special Provisions</b>	No special precautions. Tunnel code: E Transport category: 3

### ICAO/IATA

<b>14.1 UN/ID no</b>	UN3082
<b>14.2 Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ZINC SULPHATE)
<b>14.3 Hazard class</b>	9
<b>14.4 Packing Group</b>	III



14.5 Environmental Hazard Yes  
14.6 Special Provisions No special precautions.  
Tunnel code: E  
Transport category: 3

## Section 15: REGULATORY INFORMATION

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

#### European Union

##### Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV)

This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

##### Persistent Organic Pollutants

Not Applicable

##### Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not Applicable

#### International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINC S (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
ethane-1,2-diol 107-21-1	X	X	X	X	X	X	X	X
Zinc sulfate 7733-02-0	X	X	X	X	X	X	X	X

### 15.2. Chemical safety assessment

A chemical safety assessment is not required to be included for this product.

## Section 16: OTHER INFORMATION

### Key or legend to abbreviations and acronyms used in the safety data sheet

#### Full text of R-phrases referred to under sections 2 and 3

Not applicable

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

H302 - Harmful if swallowed

H318 - Causes serious eye damage

H373 - May cause damage to organs through prolonged or repeated exposure

H410 - Very toxic to aquatic life with long lasting effects

#### Legend

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road  
CAS: CAS (Chemical Abstracts Service)  
Ceiling: Maximum limit value:  
DNEL: Derived No Effect Level (DNEL)  
EINECS: EINECS (European Inventory of Existing Chemical Substances)  
GHS: Globally Harmonised System (GHS)  
IATA: International Air Transport Association (IATA)

**ICAO:** International Civil Aviation Organization  
**IMDG:** International Maritime Dangerous Goods (IMDG)  
**LC50:** LC50 (lethal concentration)  
**LD50:** LD50 (lethal dose)  
**PBT:** Persistent, Bioaccumulative, and Toxic (PBT) Chemicals  
**RID:** Regulations Concerning the International Transport of Dangerous Goods by Rail  
**STEL:** Short term exposure limit  
**SVHC:** SVHC: Substances of Very High Concern for Authorisation:

**TWA:** time weighted average  
**vPvB:** very Persistent and very Bioaccumulative

**Revision date:** 2018-07-19

**Reason for revision:** Format Change.

**Disclaimer**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

**Prepared By**

FMC Corporation

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**End of Safety Data Sheet**