# SAFETY DATA SHEET

NoroTec AB

Date of Issue: October 10, 2019 Version 5.0 Replaces: April 28, 2016

# NoroTec™ Zinc Seed

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

### 1.1 Product identifier

| | |
|---|---|
| **PRODUCT NAME:** | **NoroTec™ Zinc Seed** |
| **Group Name** | Fertilisers based on zinc. |

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

| | |
|---|---|
| **Use of the product** | Seed treatment. |
| **Limited conditions of use** | Not applicable |

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

| | |
|---|---|
| **Company** | NoroTec AB |
| **Address** | Södergatan 74 |
| **Zip Code / City or Town** | SE-274 34 Skurup |
| **Country** | Sweden |
| **Telephone** | +46 411 406 60 |
| **Contact person** | Bo Isacsson |
| **E-mail** | mail@norotec.se |

### 1.4 Emergency telephone number

| | |
|---|---|
| **Emergency telephone number** | Call 112 – ask for Poisson Information Centre. |

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or preparation

**Product definition:** Mixture

**Classification according to (EG) 1272/2008**

Acute Tox. 4; H302
Eye Dam. 1; H318
Aquatic Acute 1, H400
Aquatic Chronic 1, H410

### 2.2 Label Information

**Label elements according to (EG) 1272/2008**

Labelling required.

**Signal Word: Danger**

**Hazard Statement**

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

**Precautionary statements**

| | |
|---|---|
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection |
| **P302+P352**. | IF ON SKIN: Wash with plenty of soap and water. |
| **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/physician. |
| **P273** | Avoid release to the environment |
| **P391** | Collect spillage. |
| **P501** | Dispose of contents/container to a licensed hazardous waste disposal contractor. |

**Contains**

| | |
|---|---|
| Zinc sulphate | 30-50 weight-% |
| Zinc nitrate | 10-25 weight-% |

**2.3 Other hazards**

| | |
|---|---|
| PBT / vPvB | The product contains no PBT or vPvB substances. |
| Other hazards which do not cause classification | Not applicable. |

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substance (UVCB)**

| No | Component/ ingredient name | EC-number | CAS-number | REACH registration number | Conc. (weight-%) | Classification CLP] |
|---|---|---|---|---|---|---|
| **1** | Zinc nitrate | 231-943-8 | 7779-88-6 | 05-2117368463-38-0000 | 30-50 | Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1, H410 |
| **2** | Zinc sulfate monohydrate | 231-793-3 | 7446-19-7 | 01-2119474684-27-0000 | 10-25 | Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| **4** | Citric acid | 201-069-1 | 77-92-9 | 01-2119457026-42-0000 | 2-4 | Eye Irrit. 2; H319 |
| **5** | Urea | 200-315-5 | 57-13-6 | 01-2119463277-33-0000 | 1-10 | Not classified as dangerous |
| **6** | Water | 231-791-2 | 7732-18-5 | -- | 40-60 | Not classified as dangerous |

See section 16 for the full text of the hazard statements declared above. Occupational exposure limits are mentioned under section 8, if such exist.

## 4. FIRST AID

**4.1 Description of first aid measures**

| | |
|---|---|
| **Inhalation** | Not relevant. |
| **Skin contact** | Remove contaminated clothing. Wash skin thoroughly with soap and water. |
| **Eye contact** | Hold eyelids apart. Rinse with water for 10 minutes. Immediate first aid is necessary. |
| **Ingestion** | Rinse mouth with water. Drink a few glasses of water or milk. Contact physician if larger quantity has been consumed. |

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

| | |
|---|---|
| **Inhalation** | Not relevant. |
| **Skin contact** | Repeated exposure causes dry skin, irritation, redness and cracking. |
| **Eye contact** | Causes serious eye damage. |
| **Ingestion** | Harmful if swallowed. May cause nausea, vomiting and diarrhea. |

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

| | |
|---|---|
| **Notes to physician** | Treat symptomatically. |
| **Specific treatments** | No specific treatment. |

## 5. FIRE FIGHTING MEASURES

**5.1 Extinguishing media**

| | |
|---|---|
| **General information** | Non-flammable product. |
| **5.1.1 Suitable extinguishing media** | The product is not flammable. Choose extinguishing agents based on the surrounding fire |
| **5.1.2 Unsuitable extinguishing media** | None |

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

| | |
|---|---|
| **Hazards from the substance or preparation** | No fire or explosion risk exists. |
| **Hazardous thermal decomposition products** | Zinc oxides and sulfur oxides. |

**5.3 Advice to firefighters**

| | |
|---|---|
| **5.3.1. Special protective actions for fire-fighters** | Avoid inhalation of toxic fumes. |
| **5.3.2 Special protective equipment for fire-fighters** | Fire-fighters should use chemically protective clothing and self-contained breathing apparatus. |
| **5.3.3 Further information** | If possible, move the product from the fire area. Otherwise cool containers exposed to flames with water until fire is out. Do not allow run-off from firefighting to enter drains or water courses |

## 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures**
Provide good ventilation. Keep people away from the site.
Avoid contact with eyes and skin.
For information on personal equipment, see section 8.

**6.1.1 For non-emergency personnel**
Wear protective equipment as described under section 8.

**6.2 Environmental precautions**
Avoid dispersal of spilt material in waterways and sewers or contaminate of soil and vegetation. If this is not possible immediately contact the police and relevant authorities.

**6.3 Methods and materials for containment and cleaning up**
Dike spills using vermiculite, sand or other inert absorbent material and place in sealable containers.
Clean up area with detergent and water subsequently. Collected material should be disposed of as hazardous waste, see section 13.

**6.4 Reference to other sections**
See section 8. for personal protective equipment.
See section 13 for handling of waste materials.

## 7. HANDLING AND STORAGE

**7.1 Precautions for safe handling**

| | |
|---|---|
| **Handling** | Provide good ventilation. Avoid contact with eyes and skin. Avoid breathing vapours. Do not eat, drink or smoke while working. Wash hands before break and after work. |

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

| | |
|---|---|
| **Storage conditions** | Keep dry and cool. |

**7.3 Special characteristics and risks**

| | |
|---|---|
| **Conditions to avoid** | None. |

**7.4 Specific end use(s)**

| | |
|---|---|
| **Specific use (s)** | Fertilizers. |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Control parameters**
**Occupational Exposure Limit:**

| Substance | CAS no. | Range | ppm | mg/m³ | Year | Remarks |
|---|---|---|---|---|---|---|
| -- | -- | -- | -- | -- | -- | -- |

**8.2 Exposure Control**
Provide good ventilation. Avoid contact with skin and eyes. Do not eat, drink or smoke while working.
Wash hands before break and after work.

**8.2.1 Appropriate technical controls**
Not relevant for this product.

**8.2.2 Individual protective measures, e.g. protective personal equipment.**

| | |
|---|---|
| **8.2.2.1 Respiratory protection** | Not normally required. At risk of inhalation of spray mist use respiratory equipment (half mask with particle filter P2). |
| **8.2.2.2 Eye/face protection** | In case of splashes, wear tight-fitting safety goggles. |
| **8.2.2.3 Hand protection** | At the risk of prolonged and repeated contact with the product, use protective gloves made of butyl rubber. |
| **8.2.2.4 Body protection** | Wear appropriate protective clothing. |
| **8.2.2.5 Thermal hazards** | The product does not constitute a thermal hazard. No special measures required. |

**8.2.2 Environmental exposure controls**
Avoid release to the environment.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Colour** | Slightly yellow green |
| **Odour** | Practically |

| | |
|---|---|
| **Odour threshold** | Not available |
| **Solubility** | Completely soluble in water. |
| **pH (product)** | 1.8 |
| **Melting point /freezing point** | Not available. |
| **Initial boiling point and kitchen range** | 100°C |
| **Flash point** | > 100 °C |
| **Evaporation rate** | Not available. |
| **Flammable (solid, gas)** | Not applicable |
| **Burning time** | Not applicable |
| **Burning rate** | Not applicable |
| **Upper / lower flammability or explosive limits** | Not explosive |
| **Steam pressure** | Not available. |
| **Vapour density** | Not available. |
| **Relative density** | 1.35 g/cm3 vid 20 °C |
| **Partition coefficient octanol/water** | Not applicable |
| **Ignition temperature** | Not relevant. |
| **Decomposition Temperature** | Not available. |

**9.2 Other information**

| | |
|---|---|
| **VOC** | Not applicable |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **10.1 Reactivity** | Non-reactive. |
| **10.2 Chemical stability** | Chemically stable under normal conditions of use and storage. |
| **10.3 Possibility of hazardous reactions** | None |
| **10.4 Conditions to avoid** | None |
| **10.5 Incompatible materials** | None |
| **10.6 Hazardous decomposition products** | Thermal decomposition results in the formation of zinc oxides and sulfur oxides. |

## 11. TOXICOLOGICAL INFORMATION

**11.1 Information on toxicological effects**

**Acute toxicity**

Not harmful by skin contact. Not harmful if inhaled. Harmful if swallowed.

**Acute toxicity of zinc nitrate**

| Exposure route | Value/Unit | Species | Exp. time | Method/note |
|---|---|---|---|---|
| LD50, oral | 1400 mg/kg | rat | -- | ECHA |
| LD50, dermal | > 2000 mg/kg | rat | -- | ECHA |

**Acute toxicity of zinc sulfate, monohydrate**

| Exposure route | Value/Unit | Species | Exp. time | Method/note |
|---|---|---|---|---|
| LD50, oral | 623 mg/kg | rat | -- | ECHA |
| LD50, dermal | > 2000 mg/kg | rat | -- | ECHA |
| LC50, inhalation | 46-73 mg/l | rat | 4 h | -- |

**Acute toxicity of the product**

| Exposure route | Value/Unit | Species | Exp. time | Method/note |
|---|---|---|---|---|
| LD50, oral | 1300 mg/kg | -- | -- | ATE-mix, calculated |
| LD50, dermal | > 2000 mg/kg | -- | -- | ATE-mix, calculated |
| LC50, inhalation | > 20 mg/l | -- | 4 h | ATE-mix, calculated |

**Irritation/Corrosion**
Assessment of skin corrosion/irritation, classification
Irritating to skin.

Assessment of eye damage or irritation, classification
Causes serious eye damage.

**11.2 Potential acute effects**

| | |
|---|---|
| **Inhalation** | Not relevant. |
| **Skin contact** | Repeated exposure gives rise to dry skin, irritation, redness and skin cracking |
| **Eye contact** | Causes serious eye damage. Immediate first aid is necessary. |
| **Ingestion** | Harmful if swallowed. May cause nausea, vomiting and diarrhea. |

**11.3 Sensitization by inhalation/skin contact**
Assessment of sensibility for the product:
The product does not contain any sensitizing agents.

**11.4.1 Germ cell mutagenicity**
Assessment of mutagenicity for the product:
Based on available data, the classification criteria are not met.

**11.4.2 Carcinogenicity**
Assessment of carcinogenicity for the product:
Based on available data, the classification criteria are not met.

**11.4.3 Reproduction toxicity**
Assessment of reproduction toxicity for the product:
Based on available data, the classification criteria are not met.

**11.5.1 Specific target organ toxicity (single exposure)**
STOT assessment single dos toxicity:
Shall not be classified as a specific target organ toxicant (single exposure).

**11.6.2 Repeated dose toxicity and specific organ toxicity (repeated exposure)**
STOT assessment of repeated dose toxicity:
Shall not be classified as a specific target organ toxicant (repeated exposure).

**11.6 Aspiration**
Shall not be classified as presenting an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

**12.1. 1 Toxicity**
**Acute aquatic toxicity of zinc nitrate.**

| Test | Value/unit | Test Method | Exp. time | Species |
|---|---|---|---|---|
| Fish LC50 | 0.112 mg/l | ECHA | 96 h | -- |
| Dahpnia EC50 | 0.155 | ECHA | 49 h | |
| Zinc has moderate to high bioaccumulation in aquatic organisms but gives no biomagnification in the food chain. | | | | |

**Acute aquatic toxicity of zinc sulfate monohydrate**

| Test | Value / unit | Test Method | Exp. time | Species |
|---|---|---|---|---|
| Fish C50 | 0.6 | ECHA | 96 timmar | Pimephales promelas |
| Daphnia EC50 | 0.75 | ECHA | 48 timmar | Daphnia magna |
| Algae IC50 | 0.52 | IUCLID | 72 timmar | Scenedesmus quadricauda |
| BCF: 13900. Log Pow: <-2.5. Zinc has moderate to high bioaccumulation in aquatic organisms but gives no biomagnification in the food chain. | | | | |

**Ecological toxicity**
The product is very toxic to aquatic organisms.

**12.2 Persistence and degradability**

| | |
|---|---|
| **Conclusion/Summary** | The product contains the element zinc. Elements are by definition not biodegradable |

**12.3 Bioaccumulative potential**

| | |
|---|---|
| **Conclusion/Summary** | Zinc has moderate to high bioaccumulation in aquatic organisms but gives no biomagnification in the food chain. |

**12.4 Mobility in soil**
The product is mobile in the soil profile due to its high solubility in water.
Adsorption to solid soil particles is not expected.

**12.5 Results of PBT and vPvB assessment**
The product contains no substances which are identified as a PBT or vBvP substance (substance that is persistent, bioaccumulative and toxic**).**

**12.6 Other adverse effects**
None known

**12.7 Other information**
The mixture in concentrated form is classified as very toxic to aquatic life with long lasting effects.
Solution ready for use that is spread on arable land is not considered dangerous for the environment.
However, avoid spreading near lakes and rivers

## 13. DISPOSAL CONSIDERATIONS

**13.1 Waste treatment methods**
**Product**

| | |
|---|---|
| **Method of disposal** | Residues and waste are hazardous waste. Dispose of at an approved disposal facility. |
| **Hazardous waste** | Yes |

**Packaging**

| | |
|---|---|
| **Method of disposal** | Uncleaned empty packaging is hazardous waste. Dispose of at an approved disposal facility. |
| **Hazardous waste** | Yes |
| **Special precautions** | Not relevant |

**European Waste Catalogue (EWC)**

| EWC Waste Code | Type of waste |
|---|---|
| 02 01 08* | Agrochemical waste containing dangerous substances |
| 15 01 10* | Packaging containing residues of or contaminated by dangerous substances |

## 14. TRANSPORT INFORMATION

This product is classified as dangerous goods.

| | |
|---|---|
| **UN-no:** | 3082 |
| **Proper Shipping Name:** | Environmentally hazardous substance, liquid n.o.s. (zinc nitrate/zinc sulphate) |

**ADR / RID (Road / Rail Transport)**

| | | | |
|---|---|---|---|
| **Class:** | 9 | **Packing Group:** | III |
| **Label:** | -- | **Environmental hazards:** | Yes |
| **Hazard number:** | 90 | **Tunnel restriction code** | E |

**IMDG (SEA)**

| | | | |
|---|---|---|---|
| **Class:** | 9 | **Packing Group:** | III |
| **Label** | -- | **EmS** | F-A, S-F |
| **Marine Pollutant:** | Yes | | |

**IATA (Air Transport)**

| | | | |
|---|---|---|---|
| **Class:** | 9 | **Packing Group:** | III |
| **Label:** | -- | **Environmental hazards:** | Yes |

**14.7 Bulk transport in accordance with annex II of convention Marpol 73/78 and IBC-Code**
Not covered by this legislation.

## 15. REGULATORY INFORMATION

**15.1 Safety, health and environmental regulations/legislation specific for the substance or preparation**
Classification and labelling according to (EG) 1272/2008 is available under section 2. This Safety Data Sheet is prepared in accordance with Annex II of the REACH Regulation (EC) 1907/2006 and Regulation (EC) No. 453/2010 Appendix I.

| | |
|---|---|
| **Authorisation** | Not required. |
| **Restriction in use** | None. |
| **Other EU legislation** | This product contains no ozone depleting substance and no persistent organic pollutant. |

**15.2 Chemical Safety Assessment**
Not relevant for products.

## 16. OTHER INFORMATION

**THE PRODUCER'S NOTES**
This safety data sheet is provided by MM-Support AB, Sweden, and approved by NoroTec AB, Sweden.

**LIST OF HAZARD STATEMENTS MENTIONED UNDER SECTION 2 and 3**

| No. | Text |
|---|---|
| **H302** | Harmful if swallowed. |
| **H318** | Causes serious eye damage. |
| **H319** | Causes serious eye irritation. |
| **H373** | May cause damage to organs through prolonged or repeated exposure by inhalation and ingestion |
| **H400** | Very toxic to aquatic life. |
| **H410** | Very toxic to aquatic life with long lasting effects. |

# NoroTec™ Zinc Seed

| | |
|---|---|
| **H411** | Toxic to aquatic life with long lasting effects. |

**Revision overview**

| Version | Revision date | Responsible | Changes in section |
|---|---|---|---|
| v.2 | September 5, 2012 | Bo Isacsson | 2 and 3 |
| v.3 | November 26, 2012 | Bo Isacsson | 3 |
| v.4 | April 28, 2016 | Bo Isacsson | The entire safety data sheet has been updated to REACH II format. The content of sections 2, 3 and 12 has also been changed. |
| v.5 | October 10, 2019 | Bo Isacsson | 2, 3, 4, 11, 13, 12 and 15 |