



# Material Safety Data Sheet

According to EC Regulation 1907/2006

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

### Identification of the substance or preparation

MSDS Ref. No.: 4014.01.20  
Product name: Sierraform GT Spring Start

### Use of the Substance/Preparation

Recommended use: Fertilizer.

### Company/Undertaking Identification

Everris International BV  
Nijverheidsweg 1-5; 6422 PD Heerlen (NL)  
Tel: ++31 (0) 45-5609100; Fax: ++31 (0) 45-5609190

**Emergency telephone number:** +44 1235 239 670 (24h)

**Email** INFO-MSDS@EVERRIS.com

## 2. HAZARDS IDENTIFICATION

### Classification

#### **Indication of danger:**

This product does not have to be classified according to the EU regulations (1999/45/EC)

#### **Most important hazards**

None

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature of the preparation

Ingredients	CAS-No	Weight %	EC-No.	Classification
Iron sulphate, FeSO <sub>4</sub> +1H <sub>2</sub> O	7720-78-7	5 - 10%	231-753-5	Xn;R22 R36/38
Manganese sulphate, MnSO <sub>4</sub>	7785-87-7	< 1%	232-08-99	N;R51/53 Xn;R48/20/22

NE = Non-Established

**For the full text of the R phrases mentioned in this Section, see Section 16**

#### 4. FIRST AID MEASURES

<b>General advice:</b>	If you feel unwell, seek medical advice (show the label where possible).
<b>Ingestion:</b>	Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. In case of respiratory difficulties practice oxygenotherapy. Possible symptoms are nausea and/or vomiting.
<b>Inhalation:</b>	In case of shortness of breath, give oxygen. Possible symptoms are coughing and/or dyspnoea. Move to fresh air. If symptoms persist, call a physician.
<b>Skin contact:</b>	If a person feels unwell or symptoms of skin irritation appear, consult a physician.
<b>Eye contact:</b>	Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists, consult a specialist.
<b>Notes to physician:</b>	Artificial respiration and/or oxygen may be necessary

#### 5. FIRE-FIGHTING MEASURES

<b>Suitable extinguishing media:</b>	Coordinate fire extinguishing measures to fire in surrounding area.
<b>Unsuitable extinguishing media:</b>	Not applicable
<b>Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases:</b>	Thermal decomposition can lead to release of irritating gases and vapours.
<b>Special protective equipment for firefighters:</b>	Wear self contained breathing apparatus for fire fighting if necessary.

#### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions:</b>	Ensure adequate ventilation. Avoid dust formation. Use personal protective equipment. Wear personal protective equipment.
<b>Environmental precautions:</b>	Prevent product from entering drains. Do not contaminate surface water.

**Methods for cleaning up:**

Shovel or sweep up. Do not create a powder cloud by using a brush or compressed air. Prevent product from entering drains.

## 7. HANDLING AND STORAGE

**Handling:****Technical measures/precautions:**

No special technical protective measures required.

**Safe handling advice:**

Keep away from open flames, hot surfaces and sources of ignition.

**Storage:****Technical measures/storage conditions:**

Keep away from heat and sources of ignition. Keep away from food, drink and animal feeding stuffs. For quality reasons: Keep out of reach of direct sunlight, store under dry conditions, partly used bags should be closed well. Keep at temperatures between 0 °C and 40 °C .

**Incompatible products:**

Not applicable

**Specific use(s):**

Fertilizer.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering measures to reduce exposure:**

Ensure adequate ventilation.

**Occupational exposure controls****Personal protective equipment****Respiratory protection:**

Not applicable.

**Hand protection:**

PVC or other plastic material gloves.

**Eye/face protection**

Safety glasses.

**Skin and body protection:**

Usual safety precautions while handling the product will provide adequate protection against this potential effect.

**Hygiene measures**

Follow good housekeeping practices. When using, do not eat, drink or smoke. Keep away from food, drink and animal feeding stuffs.

**Exposure limit values***Iron sulphate, FeSO<sub>4</sub>+1H<sub>2</sub>O***ACGIH:**

1 mg/m<sup>3</sup> TWA

**Australia TWA**

1 mg/m<sup>3</sup> TWA

**Belgium - 8 Hr VLE**

1 mg/m<sup>3</sup>

**Finland - Occupational Exposure Limits - 8 hour**

1 mg/m<sup>3</sup>

**Netherlands - OEL - MACs:**

1 mg/m<sup>3</sup>

**Norway - 8 h:**

0.01 mg/m<sup>3</sup>

**Portugal - TWAs**

1 mg/m<sup>3</sup> TWA

**Spain - Valores Limite Ambientales - VLE**

1 mg/m<sup>3</sup> VLA-ED

**UK EH40 WEL:**

LTEL (8 hr TWA) 1 mg/m<sup>3</sup>

STEL (15 min) 2mg/m<sup>3</sup>

*Manganese sulphate, MnSO4*

ACGIH:	0.2 mg/m <sup>3</sup> TWA
Australia TWA	1 mg/m <sup>3</sup> TWA
Belgium - 8 Hr VLE	0.2 mg/m <sup>3</sup>
Czech Republic OEL	= 1 mg/m <sup>3</sup> TWA
Finland - Occupational Exposure Limits - 8 hour	0.5 mg/m <sup>3</sup>
Germany TRGS900:	0.5 mg/m <sup>3</sup> TWA
Germany (DFG) - MAK	0.5 mg/m <sup>3</sup> MAK
Netherlands - OEL - MACs:	1 mg/m <sup>3</sup>
Norway - 8 h:	2.5 mg/m <sup>3</sup>
Portugal - TWAs	0.2 mg/m <sup>3</sup> TWA
Spain - Valores Limite Ambientales - VLE	0.2 mg/m <sup>3</sup> VLA-ED
Sweden - OEL - 8 Hour	0.1 mg/m <sup>3</sup> LLV 0.2 mg/m <sup>3</sup> LLV
UK EH40 WEL:	5 mg/m <sup>3</sup>

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**General Information**

<b>Physical State:</b>	Solid
<b>Appearance:</b>	Granular
<b>Color:</b>	Brown, Grey
<b>Odor:</b>	No information available

**Important Health Safety and Environmental Information**

<b>Boiling point/range:</b>	Not applicable
<b>Melting point/range:</b>	Not applicable
<b>Decomposition temperature:</b>	> 150°C
<b>Solubility:</b>	Moderately soluble
<b>Vapour pressure</b>	Not applicable
<b>Vapour density</b>	Not applicable
<b>Explosive properties:</b>	Doesn't present explosion hazard
<b>Flammability (solid, gas):</b>	Non-flammable

**Other information**

<b>pH:</b>	No information available
<b>Bulk density:</b>	820 - 920 kg/m <sup>3</sup>

## 10. STABILITY AND REACTIVITY

<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Conditions to avoid</b>	Keep away from open flames, hot surfaces and sources of ignition.
<b>Hazardous decomposition products</b>	No decomposition if stored normally. Thermal decomposition can lead to release of irritating gases and vapours.
<b>Hazardous reactions</b>	None reasonably foreseeable

## 11. TOXICOLOGICAL INFORMATION

### Component information

*Iron sulphate, FeSO<sub>4</sub>+1H<sub>2</sub>O*

**LD50/oral/rat =** 1389 mg/kg

*Manganese sulphate, MnSO<sub>4</sub>*

**LD50/oral/rat =** 9 g/kg

### **Other information on acute toxicity:**

No information available

### Product information

#### Local effects

**Skin effects:** May cause skin irritation in susceptible persons.

**Eye effects:** Contact with eyes may cause irritation.

**Inhalation:** May cause sensitization by inhalation.

**Ingestion:** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

## 12. ECOLOGICAL INFORMATION

### Product information

**Aquatic toxicity:** No ecological information is known on the product

**Ecotoxicity** No ecological information is known on the product

**Persistence and degradability** No persistent or cumulative effects were observed

**Bioaccumulative potential** Does not bioaccumulate

**Mobility in soil** No information available

### Component information

*Iron sulphate, FeSO<sub>4</sub>+1H<sub>2</sub>O*

**Ecotoxicity effects**  
EC50/48h/daphnia = >100mg/l  
LC50/96h/rainbow trout = >72.5mg/l (6d)  
EC50/72h/algae = 22mg/l

*Manganese sulphate, MnSO<sub>4</sub>*

**Ecotoxicity effects** EC50/48h/daphnia => 100 mg/l

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods:** Use up product completely. Packaging material is industrial waste  
**Contaminated packaging:** Empty containers can be landfilled, when in compliance with the local regulations

## 14. TRANSPORT INFORMATION

### Product information

**Physical State:** Solid

### ADR/RID

**UN-No:** Not classified for transport

### IATA

**UN-No:** Not classified for transport

### IMO / IMDG

**UN-No:** Not classified for transport

## 15. REGULATORY INFORMATION

### Indication of danger:

This product does not have to be classified according to the EU regulations (1999/45/EC)

### In accordance with local and national regulations

**ICPE (FR):** Not applicable  
**GefStoffV (DE):** Not applicable

## 16. OTHER INFORMATION

### Text of R Phrases mentioned in Section 3

R22 - Harmful if swallowed.

R36/38 - Irritating to eyes and skin.

R48/20/22 - Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Reason for revision:** \*\*\* Indicates changes since the last revision. This version replaces all previous versions

**Revision date:** 27-Aug-2012

**Prepared by:** Regulatory Affairs Department.

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**End of Safety Data Sheet**