



# 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.: 4227.01.02  
Product name: Landscape 23+5+10

### Use of the Substance/Preparation

Recommended use: Granulated fertilizer.

### Company/Undertaking Identification

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## 2. HAZARDS IDENTIFICATION

### Classification

The product is non-dangerous in accordance with Directive 1999/45/EC

### Most important hazards

None

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Chemical nature of the preparation

Components	CAS-No	Weight %	EC-No.	Classification
Manganese sulphate, MnSO <sub>4</sub>	7785-87-7	< 1%	232-08-99	N;R51/53 Xn;R48/20/22
Sulphur, S	7704-34-9	1 - 5%	NE	Xi;R36/37/38
Ammonium nitrate, NH <sub>4</sub> NO <sub>3</sub>	6484-52-2	> 25%	229-347-8	O;R08

Components	CAS-No	Weight %	EC-No.	Classification
Iron sulphate, FeSO <sub>4</sub> +1H <sub>2</sub> O	7720-78-7	< 1%	231-753-5	Xn;R22
Magnesium oxide, MgO	1309-48-4	1 - 5%	215-171-9	NE

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.

#### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media:**

Coordinate fire extinguishing measures to fire in surrounding area.

**Unsuitable extinguishing media:**

Not applicable

**Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases:**

Danger of toxic gases in smoke in case of fire.

**Special protective equipment for firefighters:**

In the event of fire and/or explosion do not breathe fumes. Wear self contained breathing apparatus for fire fighting if necessary.

#### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:**

Ensure adequate ventilation. Avoid dust formation. Use personal protective equipment. Wear personal protective equipment.

**Environmental precautions:**

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):**

Granulated 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***Manganese sulphate, MnSO4*

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>

*Sulphur, S*France INRS (VME) VME (poussières) = 10 mg/m<sup>3</sup>

*Ammonium nitrate, NH<sub>4</sub>NO<sub>3</sub>*

Czech Republic OEL

= 10.0 mg/m<sup>3</sup> TWA*Iron sulphate, FeSO<sub>4</sub>+1H<sub>2</sub>O*

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>*Magnesium oxide, MgO*

Austria - MAKs

6 mg/m<sup>3</sup>

Belgium - 8 Hr VLE

10 mg/m<sup>3</sup>

Czech Republic OEL

= 5 mg/m<sup>3</sup> TWA

France - Valeurs Limites d'exposition (VLE)

10 mg/m<sup>3</sup>

France INRS (VME)

10 mg/m<sup>3</sup> VME

Germany (DFG) - MAK

6 mg/m<sup>3</sup>

Netherlands - OEL - MACs:

10 mg/m<sup>3</sup>

Norway - 8 h:

10 mg/m<sup>3</sup>

Portugal - TWAs

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

Spain - Valores Limite Ambientales - VLE

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

UK EH40 WEL:

10 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, Pink, Greenish
<b>Odor:</b>	No information available

### Important Health Safety and Environmental Information

<b>Decomposition temperature:</b>	> 150°C
<b>Solubility:</b>	Coating not soluble, release nutrients through coating
<b>Flammability (solid, gas):</b>	Non-flammable

### Other information

<b>Bulk density:</b>	800 - 1100 kg/m <sup>3</sup>
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## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable under recommended storage conditions.
<b>Conditions to avoid:</b>	Keep away from open flames, hot surfaces and sources of ignition.
<b>Materials to avoid:</b>	Combustible material.

**Hazardous decomposition products:**

No decomposition if stored normally. Thermal decomposition can lead to release of irritating gases and vapours.

## 11. TOXICOLOGICAL INFORMATION

### Component information

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

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

*Sulphur, S*

**LD50/oral/rat =** > 2000 mg/kg

**LD50/dermal/rat =** > 2000 mg/kg

**LC50/inhalation/4h/rat =** > 5,4 mg/l

*Ammonium nitrate, NH<sub>4</sub>NO<sub>3</sub>*

**LD50/oral/rat =** 410 mg/kg

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

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

#### **Water Endangering Class (WGK):**

1 (Scotts classification )

### Component information

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

#### **Ecotoxicity effects**

EC50/48h/daphnia => 100 mg/l

*Ammonium nitrate, NH<sub>4</sub>NO<sub>3</sub>*

**Ecotoxicity effects**

EC50/48h/daphnia =100 mg/l  
LC50/96h/rainbow trout =10 mg/l  
EC50/72h/algae = 74000 µg/l

*Iron sulphate, FeSO4+1H2O*

**Ecotoxicity effects**

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

No ecological information is known on the product nor on any of its ingredients

### 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.

**ICPE (FR):** Classified installation : article 1331, 1230

## 16. OTHER INFORMATION

### **Text of R Phrases mentioned in Section 3**

R 8 - Contact with combustible material may cause fire.

R22 - Harmful if swallowed.

R36/37/38 - Irritating to eyes, respiratory system 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

### **Prepared by:**

Regulatory Affairs Department.

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**End of Safety Data Sheet**