



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.: 4098.01.08JP
 Product name: Sierraform GT 19+0+9+4.5Mn

Use of the Substance/Preparation

Recommended use: Granulated fertilizer

Company/Undertaking Identification

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

Emergency telephone number: • +44 (0)208 762 8322 (24h)

Email: INFO-MSDS@Scotts.com

2. HAZARDS IDENTIFICATION

Classification

Xn - Harmful

Most important hazards

Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature of the preparation

Components	CAS-No	Weight %	EC-No.	Classification
Manganese sulphate, MnSO ₄	7785-87-7	10 - 25%	232-08-99	N;R51/53 Xn;R48/20/22
Sand	14808-60-7	5 - 10%	238-878-4	NE

NE = Non-Established

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

4. FIRST AID MEASURES

General advice:	If you feel unwell, seek medical advice (show the label where possible).
Ingestion:	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.
Inhalation:	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.
Skin contact:	If a person feels unwell or symptoms of skin irritation appear, consult a physician.
Eye contact:	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:

Thermal decomposition can lead to release of irritating gases and vapours. In case of fire, cool with water or waterspray.

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. Evacuate area and fight fire from a safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Avoid dust formation. Ensure adequate ventilation.

Environmental precautions:

Prevent product from entering drains. Do not contaminate surface water.

Methods for cleaning up:

Shovel or sweep up. Use up product completely. Packaging material is industrial waste.

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

Sand

Belgium - 8 Hr VLE	0.1 mg/m ³ TWA
Finland - Occupational Exposure Limits - 8 hour	0.5 mg/m ³ TWA
France INRS (VME)	0.1 mg/m ³ VME
Netherlands - OEL - MACs:	0.075 mg/m ³ TWA
Norway - 8 h:	0.1 mg/m ³ TWA
	0.3 mg/m ³ TWA
Portugal - TWAs	0.025 mg/m ³ TWA
Spain - Valores Limite Ambientales - VLE	0.1 mg/m ³ VLA-ED

Sweden - OEL - 8 Hour
UK EH40 WEL:

0.1 mg/m³ LLV
LTEL (8 Hr) 6 mg/m³ (total inhalable dust)
STEL (15 min) 2.4 mg/m³ (total respirable dust)

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information

Physical State: Solid
Appearance: Granular
Color: Dark grey, Brownish
Odor: No information available

Important Health Safety and Environmental Information

Decomposition temperature: > 150°C
Solubility: Moderately soluble
Flammability (solid, gas): Non-flammable

Other information

Bulk density: 830 - 930 kg/m³

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.
Conditions to avoid: Keep away from open flames, hot surfaces and sources of ignition.
Materials to avoid: Oxidizing agent.
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, MnSO₄
LD50/oral/rat = 9 g/kg

Sand
LD50/oral/rat = N.A.

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

Component information

Manganese sulphate, MnSO4

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:

Xn - Harmful.

15. REGULATORY INFORMATION

Xn



R48/20/22 - Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

16. OTHER INFORMATION**Text of R Phrases mentioned in Section 3**

R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R48/20/22 - Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

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