



# Material Safety Data Sheet

According to EC Directive 2001/58/EC

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Revision Number: 5

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

### Identification of the substance or preparation

MSDS Ref. No.: 4486.01.08  
Product name: Step Hi-Mag

### Use of the Substance/Preparation

Recommended use: Granulated fertilizer.

### Company/Undertaking Identification

- Scotts International BV  
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6422 PD Heerlen (NL)  
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## 2. COMPOSITION/INFORMATION ON INGREDIENTS

### Chemical nature of the preparation

Components	CAS-No	Weight %	EC-No.	Classification
Magnesium oxide, MgO	1309-48-4	1 - 5%	215-171-9	NE
Copper sulphate, CuSO <sub>4</sub>	7758-98-7	< 1%	231-847-6	N;R50/53 Xi;R36/38 Xn;R22
Manganese sulphate, MnSO <sub>4</sub>	7785-87-7	1 - 5%	232-08-99	N;R51/53 Xn;R48/20/22
Iron sulphate, FeSO <sub>4</sub> +1H <sub>2</sub> O	7720-78-7	5 - 10%	231-753-5	Xn;R22

NE = Non-Established

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

## 3. HAZARDS IDENTIFICATION

### Classification

Xn - Harmful  
N - Dangerous for the environment

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### 3. HAZARDS IDENTIFICATION

**Most important hazards**

Harmful if swallowed.

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

### 4. FIRST AID MEASURES

<b>General advice:</b>	If you feel unwell, seek medical advice (show the label where possible).
<b>Ingestion:</b>	In case of ingestion, the stomach should be emptied by gastric lavage under qualified medical supervision. If swallowed, seek medical advice immediately and show this container or label.
<b>Inhalation:</b>	If not breathing, give artificial respiration.
<b>Skin contact:</b>	If a person feels unwell or symptoms of skin irritation appear, consult a physician.
<b>Eye contact:</b>	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. Danger of toxic gases in smoke in case of fire.

**Special protective equipment for firefighters:**

In the event of fire, wear self-contained breathing apparatus.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:**

Avoid dust formation. Avoid contact with skin, eyes and clothing. Wear personal protective equipment.

**Environmental precautions:**

Keep away from living quarters. Do not allow material to contaminate ground water system. Prevent product from entering drains.

**Methods for cleaning up:**

Shovel or sweep up.

### 7. HANDLING AND STORAGE

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

Use only in area provided with appropriate exhaust ventilation.

<b>Safe handling advice:</b>	When using do not eat or drink. Handle in accordance with good industrial hygiene and safety practice.
<b>Storage:</b>	
<b>Technical measures/storage conditions:</b>	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 .
<b>Incompatible products:</b>	No information available
<b>Specific use(s):</b>	Granulated fertilizer.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering measures to reduce exposure:** Ensure adequate ventilation.

### Occupational exposure controls

#### Personal protective equipment

<b>Respiratory protection:</b>	Effective dust mask.
<b>Hand protection:</b>	Rubber gloves.
<b>Eye/face protection:</b>	Safety glasses.
<b>Skin and body protection:</b>	Not applicable.
<b>Hygiene measures</b>	Wash hands before stopping and immediately after handling.. When using, do not eat, drink or smoke.

### Exposure limit values

#### *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 inhalable fraction)
Spain - Valores Limite Ambientales - VLE	10 mg/m <sup>3</sup> VLA-ED
UK EH40 WEL:	10 mg/m <sup>3</sup>

#### *Copper sulphate, CuSO4*

Finland - Occupational Exposure Limits - 8 hour	1 mg/m <sup>3</sup> TWA
Germany (DFG) - MAK	0.1 mg/m <sup>3</sup> MAK
Sweden - OEL - 8 Hour	0.2 mg/m <sup>3</sup> LLV
	1 mg/m <sup>3</sup> LLV

#### *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>

*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>

## 9. PHYSICAL AND CHEMICAL PROPERTIES

General Information

Physical State:	Solid
Appearance:	Granular
Color:	Brownish, Grey
Odor:	Not applicable

Important Health Safety and Environmental Information

Bulk density:	1350 kg/m <sup>3</sup>
Flammability (solid, gas):	Non-flammable

Other information

## 10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Conditions to avoid:	Burning produces obnoxious and toxic fumes.
Materials to avoid:	No information available
Hazardous decomposition products:	No decomposition if stored normally

## 11. TOXICOLOGICAL INFORMATION

Component information

<i>Copper sulphate, CuSO<sub>4</sub></i>	
LD50/oral/rat =	960 mg/kg

*Manganese sulphate, MnSO4*

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

*Iron sulphate, FeSO4+1H2O*

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

### Product information

#### Local effects

**Skin effects:** May cause skin irritation in susceptible persons  
**Eye effects:** May cause eye irritation with susceptible persons  
**Inhalation:** May cause sensitization by inhalation  
**Ingestion:** Harmful if swallowed.

## 12. ECOLOGICAL INFORMATION

### Product information

**Aquatic toxicity:** Toxic to aquatic organisms

### Component information

*Copper sulphate, CuSO4*

**Ecotoxicity effects** EC50/48h/daphnia =0.8 mg/l

*Manganese sulphate, MnSO4*

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

**Additional ecological information:** Do not apply directly to lakes, streams, or ponds

## 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:** 3077  
**Proper shipping name:** Environmentally Hazardous Substance Solid N.O.S.(Iron sulfate, Manganese sulfate).  
**Hazard Class:** 9  
**Packing group:** III**IATA****UN-No:** 3077  
**Proper shipping name:** Environmentally Hazardous Substance Solid N.O.S.(Iron sulfate, Manganese sulfate)  
**Hazard Class:** 9  
**Packing group:** III**IMO / IMDG****UN-No:** 3077  
**Proper shipping name:** Environmentally Hazardous Substance Solid N.O.S.(Iron sulfate, Manganese sulfate)  
**Hazard Class:** 9  
**Packing group:** III**15. REGULATORY INFORMATION****Indication of danger:**

Xn - Harmful.

N - Dangerous for the environment.

**R -phrase(s)**

R22 - Harmful if swallowed.

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

**S -phrase(s)**

S 2 - Keep out of the reach of children.

S 9 - Keep container in a well-ventilated place.

S29 - Do not empty into drains.

S46 - If swallowed, seek medical advice immediately and show this container or label.

S60 - This material and its container must be disposed of as hazardous waste.

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

**15. REGULATORY INFORMATION**

ICPE (FR): Classified installation : article 1273

**16. OTHER INFORMATION****Text of R Phrases mentioned in Section 2**

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.

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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**