



Material Safety Data Sheet

According to EC Regulation 1907/2006

Print date: 30-May-2012

Revision Number: 1

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

Identification of the substance or preparation

MSDS Ref. No.: 4486.01.20
Product name: Step Hi-Mag

Use of the Substance/Preparation

Recommended use: Granulated 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:

The product is classified and labelled in accordance with Directive 1999/45/EC.

Most important hazards

R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature of the preparation

| Ingredients | CAS-No | Weight % | EC-No. | Classification |
|-------------|--------|----------|--------|----------------|
|-------------|--------|----------|--------|----------------|

| | | | | |
|---|-----------|----------|-----------|---------------------------------|
| Magnesium oxide, MgO | 1309-48-4 | 10 - 25% | 215-171-9 | NE |
| Iron Oxide, Fe ₂ O ₃ | 1309-37-1 | 10 - 25% | 215-168-2 | NE |
| Manganese sulphate, MnSO ₄ | 7785-87-7 | 5 - 10% | 232-08-99 | N;R51/53 Xn;R48/20/22 |
| Zinc oxide | 1314-13-2 | 1 - 5% | 1314-13-2 | N;R50/53 |
| Manganese Oxide, MnO | 1344-43-0 | 1 - 5% | 215-202-6 | NE |
| Copper Oxide, CuO | 1317-38-0 | < 1% | 215-269-1 | Xn;R20/22 |
| Iron sulphate, FeSO ₄ +1H ₂ O | 7720-78-7 | < 1% | 231-753-5 | Xn;R22 R36/38 |
| Copper sulphate, CuSO ₄ | 7758-98-7 | < 1% | 231-847-6 | N;R50/53 Xi;R36/38 Xn;R22 |

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: | 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. |
| Inhalation: | If not breathing, give artificial respiration. |
| Skin contact: | If a person feels unwell or symptoms of skin irritation appear, consult a physician. |
| Eye contact: | If eye irritation persists, consult a specialist. |
| Notes to physician: | Artificial respiration and/or oxygen may be necessary |

5. FIRE-FIGHTING MEASURES

| | |
|---|--|
| Suitable extinguishing media: | Use dry chemical, CO ₂ , water spray or "alcohol" foam. 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. |
| Hazchem code: | 2X |

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.

Safe handling advice:

When using do not eat or drink. Handle in accordance with good industrial hygiene and safety practice.

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

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:

No information available

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:**

Effective dust mask.

Hand protection:

Rubber gloves.

Eye/face protection

Safety glasses.

Skin and body protection:

Not applicable.

Hygiene measures

Wash hands before stopping and immediately after handling. When using, do not eat, drink or smoke.

Exposure limit values*Magnesium oxide, MgO***ACGIH:**

10 mg/m³ TWA

OSHA:

15 mg/m³ TWA total

Australia TWA

10 mg/m³ TWA

Austria - MAKs

6 mg/m³

Belgium - 8 Hr VLE

10 mg/m³

Czech Republic OEL

5 mg/m³ TWA

| | |
|---|-----------------------------|
| France - Valeurs Limites d'exposition (VLE) | 10 mg/m ³ |
| France INRS (VME) | 10 mg/m ³ VME |
| Germany (DFG) - MAK | 6 mg/m ³ |
| Netherlands - OEL - MACs: | 10 mg/m ³ |
| Norway - 8 h: | 10 mg/m ³ |
| Portugal - TWAs | 10 mg/m ³ TWA |
| Spain - Valores Limite Ambientales - VLE | 10 mg/m ³ VLA-ED |
| UK EH40 WEL: | 10 mg/m ³ |

Iron Oxide, Fe₂O₃

| | |
|---|--|
| ACGIH: | 5 mg/m ³ TWA |
| OSHA: | 10 mg/m ³ TWA |
| Australia TWA | 5 mg/m ³ TWA |
| Belgium - 8 Hr VLE | 5 mg/m ³ TWA |
| Czech Republic OEL | = 10.0 mg/m ³ TWA |
| Finland - Occupational Exposure Limits - 8 hour | 5 mg/m ³ TWA |
| France INRS (VME) | 5 mg/m ³ VME |
| Germany (DFG) - MAK | 1.5 mg/m ³ MAK |
| Norway - 8 h: | 3 mg/m ³ TWA |
| Portugal - TWAs | 5 mg/m ³ TWA |
| Spain - Valores Limite Ambientales - VLE | 5 mg/m ³ VLA-ED |
| Sweden - OEL - 8 Hour | 3.5 mg/m ³ LLV |
| UK EH40 WEL: | 1 mg/m ³ TWA 5 mg/m ³ TWA |

Manganese sulphate, MnSO₄

| | |
|---|--|
| ACGIH: | 0.2 mg/m ³ TWA |
| Australia TWA | 1 mg/m ³ TWA |
| 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 |

Zinc oxide

| | |
|---|---|
| ACGIH: | 2 mg/m ³ TWA |
| OSHA: | 15 mg/m ³ TWA total 5 mg/m ³ TWA |
| Australia TWA | 5 mg/m ³ TWA |
| Belgium - 8 Hr VLE | 10 mg/m ³ TWA 5 mg/m ³ TWA |
| Czech Republic OEL | = 2 mg/m ³ TWA |
| Finland - Occupational Exposure Limits - 8 hour | 2 mg/m ³ TWA |
| France INRS (VME) | 10 mg/m ³ VME 5 mg/m ³ VME |
| Germany (DFG) - MAK | 1 mg/m ³ MAK |
| Norway - 8 h: | 5 mg/m ³ TWA |
| Portugal - TWAs | 2 mg/m ³ TWA |
| Spain - Valores Limite Ambientales - VLE | 10 mg/m ³ VLA-ED 5 mg/m ³ VLA-ED |
| Sweden - OEL - 8 Hour | 5 mg/m ³ LLV |
| UK EH40 WEL: | 5 mg/m ³ TWA |

Manganese Oxide, MnO

| | |
|---|------------------------------|
| ACGIH: | 0.2 mg/m ³ TWA |
| Australia TWA | 1 mg/m ³ TWA |
| Belgium - 8 Hr VLE | 0.2 mg/m ³ TWA |
| Czech Republic OEL | = 1 mg/m ³ TWA |
| Finland - Occupational Exposure Limits - 8 hour | 0.5 mg/m ³ TWA |
| Germany TRGS900: | 0.5 mg/m ³ TWA |
| Germany (DFG) - MAK | 0.5 mg/m ³ MAK |
| Norway - 8 h: | 0.1 mg/m ³ TWA |
| | 1 mg/m ³ TWA |
| 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 |

Copper Oxide, CuO

| | |
|---|---------------------------|
| Finland - Occupational Exposure Limits - 8 hour | 1 mg/m ³ TWA |
| Germany (DFG) - MAK | 0.1 mg/m ³ MAK |
| Sweden - OEL - 8 Hour | 0.2 mg/m ³ LLV |
| | 1 mg/m ³ LLV |
| UK EH40 WEL: | 0.2 ppm TWA |
| | 1 mg/m ³ TWA |

Iron sulphate, FeSO₄+1H₂O

| | |
|---|-------------------------------------|
| ACGIH: | 1 mg/m ³ TWA |
| Australia TWA | 1 mg/m ³ TWA |
| Belgium - 8 Hr VLE | 1 mg/m ³ |
| Finland - Occupational Exposure Limits - 8 hour | 1 mg/m ³ |
| Netherlands - OEL - MACs: | 1 mg/m ³ |
| Norway - 8 h: | 0.01 mg/m ³ |
| Portugal - TWAs | 1 mg/m ³ TWA |
| Spain - Valores Limite Ambientales - VLE | 1 mg/m ³ VLA-ED |
| UK EH40 WEL: | LTEL (8 hr TWA) 1 mg/m ³ |
| | STEL (15 min) 2mg/m ³ |

Copper sulphate, CuSO₄

| | |
|---|---------------------------|
| Australia TWA | N.A. |
| Finland - Occupational Exposure Limits - 8 hour | 1 mg/m ³ TWA |
| Germany (DFG) - MAK | 0.1 mg/m ³ MAK |
| Sweden - OEL - 8 Hour | 0.2 mg/m ³ LLV |
| | 1 mg/m ³ LLV |

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information

| | |
|------------------------|----------------|
| Physical State: | Solid |
| Appearance: | Granular |
| Color: | Brownish, Gray |
| Odor: | Not applicable |

Important Health Safety and Environmental Information

| | |
|-----------------------------|----------------|
| Boiling point/range: | Not applicable |
| Melting point/range: | Not applicable |
| Vapour pressure | Not applicable |
| Vapour density | Not applicable |

9. PHYSICAL AND CHEMICAL PROPERTIES

Explosive properties: Doesn't present explosion hazard
Flammability (solid, gas): Non-flammable

Other information

Oxidising properties: Not oxidizing.
pH: No information available
Bulk density: +/- 1350 kg/m³

10. STABILITY AND REACTIVITY

Chemical stability Stable under recommended storage conditions.
Conditions to avoid Burning produces obnoxious and toxic fumes.
Incompatible materials Keep away from heat and sources of ignition.
Hazardous decomposition products No decomposition if stored normally
Hazardous reactions None reasonably foreseeable

11. TOXICOLOGICAL INFORMATION

Component information

Manganese sulphate, MnSO₄
LD50/oral/rat = 9 g/kg

Iron sulphate, FeSO₄+1H₂O
LD50/oral/rat = 1389 mg/kg

Copper sulphate, CuSO₄
LD50/oral/rat = 960 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

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Product information

| | |
|--------------------------------------|--|
| Aquatic toxicity: | Harmful to aquatic organisms. |
| Ecotoxicity | May cause long-term adverse effects in the aquatic environment |
| Persistence and degradability | No persistent or cumulative effects were observed |
| Bioaccumulative potential | Does not bioaccumulate |
| Mobility in soil | No information available |

Component information

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

Copper sulphate, CuSO₄

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

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: | 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:

The product is classified and labelled in accordance with Directive 1999/45/EC.

In accordance with local and national regulations**ICPE (FR):**

Classified installation : article 1273

16. OTHER INFORMATION

Text of R Phrases mentioned in Section 3

R22 - Harmful if swallowed.

R20/22 - Harmful by inhalation and 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

Revision date:

30-May-2012

Prepared by:

Regulatory Affairs Department.

End of Safety Data Sheet