

Safety Data Sheet

Issue Date: 02-Dec-2015

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Version: 2.01

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Name: Step Hi-Mag
Product Code: 44860120DC

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use: Fertilizer. Restricted to professional users.
Uses Advised Against: Consumer use [SU 21].

1.3. Details of the supplier of the safety data sheet

Manufacturer

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

For further information, please contact

INFO-MSDS@EVERRIS.COM

1.4. Emergency telephone number

IN CASE OF AN EMERGENCY CALL: +44 1235 239 670 (24h)

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Mixture

Regulation (EC) No 1272/2008

Acute toxicity - Oral	Category 4 - (H302)
Eye Irritation	Category 2 - (H319)
Specific Target Organ Toxicity (Repeated Exposure)	Category 2 - (H373)
Chronic aquatic toxicity	Category 2 - (H411)

2.2. Label elements

Contains Iron sulphate; $\text{FeSO}_4 \cdot 1\text{H}_2\text{O}$, Manganese sulphate; $\text{MnSO}_4 \cdot 1\text{H}_2\text{O}$, Zinc Sulfate anh; ZnSO_4 , Copper (I) Oxide; Cu_2O



Signal Word:

Warning

Hazard Statements:

H319 - Causes serious eye irritation
 H411 - Toxic to aquatic life with long lasting effects
 H373 - May cause damage to organs through prolonged or repeated exposure
 H302 - Harmful if swallowed

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P337 + P313 - If eye irritation persists: Get medical advice/attention
 P391 - Collect spillage
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray
 P264 - Wash skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P273 - Avoid release to the environment

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P314 - Get medical advice/attention if you feel unwell

P330 - Rinse mouth

P501 - Dispose of container in accordance with local regulation

Other hazards (UN-GHS)

H316 - Causes mild skin irritation

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Ingredients	EC-No.	CAS-No	Weight %	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Manganese sulphate; MnSO ₄ +1H ₂ O	232-08-99	7785-87-7	5 - 10%	STOT RE 2 (H373) Eye Dam. 1 (H318) Aquatic Chronic 2 (H411)	01-2119456624-35
Iron sulphate; FeSO ₄ +1H ₂ O	231-753-5	7720-78-7	5 - 10%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Acute Tox. 4 (H302)	01-2119513203-57
Zinc oxide; ZnO	1314-13-2	1314-13-2	1 - 5%	Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	01-2119463881-32
Copper Oxide; CuO	215-269-1	1317-38-0	0.1 - 1%	Acute Tox. 4 (H302) Acute Tox. 4 (H332)	01-2119502447-44
Zinc sulphate mono hydrate; ZnSO ₄ +1H ₂ O	231-793-3	7446-19-7	0.1 - 1%	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	01-2119474684-27
Copper sulphate anh; CuSO ₄	231-847-6	7758-98-7	< 0.1%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Acute Tox. 4 (H302) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	01-2119520566-40

Full text of H- and EUH-phrases: see section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice: First aid measures should be executed by trained personnel only.

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.

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.

Protection of First-Aiders: Low hazard for usual industrial or commercial handling.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms: None under normal processing

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician: None under normal processing.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media:

Coordinate fire extinguishing measures to fire in surrounding area. Use dry chemical, CO₂, water spray or "alcohol" foam.

Unsuitable extinguishing media:

High volume water jet.

5.2. Special hazards arising from the substance or mixture

The product itself does not burn. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

5.3. Advice for firefighters

Coordinate fire extinguishing measures to fire in surrounding area.

Hazchem code: 2X

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

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

For Emergency Responders: Use personal protection recommended in Section 8.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Methods for Containment: Prevent further leakage or spillage if safe to do so.

Methods for Cleanup: Shovel or sweep up.

6.4. Reference to other sections

§ 8, 12, 13.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

General hygiene considerations:

Handle in accordance with good industrial hygiene and safety practice. Use personal protection recommended in Section 8. When using, do not eat, drink or smoke.

7.2. Conditions for safe storage, including any incompatibilities

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.

LGK (Germany)

Packaging Materials:

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Bags or Bulk.

7.3. Specific end use(s)

Specific use(s)

Fertilizer; Read and follow label instructions; www.everris.com

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

<i>Manganese sulphate; MnSO₄·1H₂O</i>	
Austria	STEL 2 mg/m ³ TWA: 0.5 mg/m ³
Australia TWA	0.2 mg/m ³
Belgium - 8 Hr TWA	0.2 mg/m ³
Denmark	TWA: 0.2 mg/m ³
Finland	TWA: 0.02 mg/m ³ TWA: 0.2 mg/m ³
Ireland	TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³
Norway	TWA: 1 mg/m ³ TWA: 0.1 mg/m ³ STEL: 1 ppm STEL: 0.1 mg/m ³
Poland	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³
Portugal	TWA: 0.2 mg/m ³
Spain OEL - Time Weighted Average (TWA):	TWA: 0.2 mg/m ³
Switzerland	TWA: 0.5 mg/m ³
UK oes/mel:	TWA: 0.5 mg/m ³
<i>Iron sulphate; FeSO₄·1H₂O</i>	
Belgium - 8 Hr TWA	1 mg/m ³
Denmark	TWA: 1 mg/m ³
Finland	TWA: 1 mg/m ³
Ireland	TWA: 1 mg/m ³ STEL: 2 mg/m ³
Norway	TWA: 1 mg/m ³ STEL: 1 mg/m ³
Portugal	TWA: 1 mg/m ³
Spain OEL - Time Weighted Average (TWA):	TWA: 1 mg/m ³
Switzerland	TWA: 1 mg/m ³
UK oes/mel:	TWA: 1 mg/m ³
<i>Zinc oxide; ZnO</i>	
Austria	TWA: 5 mg/m ³
Australia TWA	5 mg/m ³ TWA
Belgium - 8 Hr TWA	10 mg/m ³ TWA
Bulgaria - Occupational Exposure Limits - TWAs	5.0 mg/m ³ TWA (as Zn)
Croatia - Occupational Exposure Limits - STELs (KGVIs)	10 mg/m ³ STEL [KGVII]
Czech Republic OEL	2 mg/m ³ TWA (as Zn)
Denmark	TWA: 4 mg/m ³
Finland	TWA: 2 mg/m ³ STEL: 10 mg/m ³
France - Occupational Exposure Limits - 8 Hour VMEs	TWA: 5 mg/m ³ TWA: 10 mg/m ³
greece OEL 15 minute	10 mg/m ³ STEL
Hungary - Occupational Exposure Limits - TWAs	5 mg/m ³ TWA
Iceland - OEL - 8 Hour	4 mg/m ³ TWA Zn
Ireland	TWA: 2 mg/m ³ STEL: 10 mg/m ³
Japan - TWAs	4 mg/m ³ OEL 1 mg/m ³ OEL
Korea - ISHA - Occupational Exposure Limits - TWAs	2 mg/m ³ TWA (dust, respirable fraction, Serial No. 275); 5 mg/m ³ TWA (fume, Serial No. 276)
Latvia - Occupational Exposure Limits - TWAs	0.5 mg/m ³ TWA
Malaysia - Occupational Exposure Limits - TWAs	5 mg/m ³ TWA (fume); 10 mg/m ³ TWA (dust)
Norway	TWA: 5 mg/m ³ STEL: 10 mg/m ³
Poland	STEL: 10 mg/m ³ TWA: 5 mg/m ³
Portugal	STEL: 10 mg/m ³ TWA: 2 mg/m ³
Romania - Occupational Exposure Limits - TWAs	5 mg/m ³ TWA (fume)
Russia TWA	0.5 mg/m ³ TWA 2271
Slovenia - Occupational Exposure Limits - TWAs	5 mg/m ³ TWA (respirable fraction, fume)

Spain OEL - Time Weighted Average (TWA):	STEL: 10 mg/m ³ TWA: 2 mg/m ³
Singapore - OEL:PELs	5 mg/m ³ PEL 10 mg/m ³ PEL
Switzerland	STEL: 3 mg/m ³ TWA: 3 mg/m ³
<i>Copper Oxide: CuO</i>	
Austria	STEL 4 mg/m ³ STEL 0.4 mg/m ³ TWA: 1 mg/m ³ TWA: 0.1 mg/m ³
Finland	TWA: 1 mg/m ³
Poland	TWA: 0.2 mg/m ³
Switzerland	STEL: 0.2 mg/m ³ TWA: 0.1 mg/m ³
<i>Copper sulphate anh: CuSO₄</i>	
Austria	STEL 4 mg/m ³ STEL 0.4 mg/m ³ TWA: 1 mg/m ³ TWA: 0.1 mg/m ³
Australia TWA	N.A.
Finland	TWA: 1 mg/m ³
Poland	TWA: 0.2 mg/m ³
Russia TWA	0.5 mg/m ³ TWA 1200
Switzerland	STEL: 0.2 mg/m ³ TWA: 0.1 mg/m ³

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Personal protective equipment

Eye/face Protection No special protective equipment required.

Skin and body protection No special protective equipment required.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State:	Solid
Appearance:	granulate
Color:	grey, brown.
Odor:	Not significant
Bulk density:	+/- 1350 kg/m ³
pH:	no data available
Melting Point/Freezing Point:	no data available
Boiling Point/Range:	Solid, Not Applicable
Flash Point:	Solid, Not Applicable
Evaporation Rate:	Solid, Not Applicable
Flammability (solid, gas):	Non-flammable
Vapor Pressure:	Solid, Not Applicable
Vapor Density:	Solid, Not Applicable
Specific Gravity:	no data available

Water Solubility:	Soluble in water
Solubility(ies)	no data available
Partition Coefficient:	Solid, Not Applicable
Autoignition Temperature:	Not Applicable
Decomposition Temperature:	no data available
Explosive Properties:	Doesn't present explosion hazard. Based on data of ingredients.

9.2. Other information

Not applicable

Section 10: STABILITY AND REACTIVITY**10.1. Reactivity**

Not reactive.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions**Possibility of hazardous reactions**

None under normal processing.

Hazardous Decomposition Products:

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

10.4. Conditions to avoid

For quality reasons: Keep out of reach of direct sunlight, store under dry conditions, partly used bags should be closed well.

10.5. Incompatible materials

None known based on information supplied.

10.6. Hazardous decomposition products

None under normal processing.

Section 11: TOXICOLOGICAL INFORMATION**11.1. Information on toxicological effects****Information on the Likely Routes of Exposure (inhalation, ingestion, skin and eye contact):****Product Information**

Inhalation	May cause irritation of respiratory tract.
Eye contact	May cause irritation.
Skin Contact	May cause irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Information on Toxicological Effects:**Symptoms** No information available.**Acute Toxicity****The following values are calculated based on chapter 3.1 of the GHS document:****ATEmix (oral):** 4,527.00 mg/kg**Unknown Acute Toxicity:** 0% of the mixture consists of ingredient(s) of unknown toxicity.

Ingredients	LD50 Oral	LD50 Dermal	LC50 Inhalation
Manganese sulphate; MnSO ₄ +1H ₂ O	= 782 mg/kg (Rat)		
Iron sulphate; FeSO ₄ +1H ₂ O	= 500 mg/kg (Rat)		
Zinc oxide; ZnO	> 5000 mg/kg (Rat)		
Copper sulphate anh; CuSO ₄	= 300 mg/kg (Rat)	= 1000 mg/kg (Rabbit)	

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-Term Exposure:

skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitization	No information available.
Germ Cell Mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive Toxicity	No information available.
STOT - Single Exposure	No information available.
STOT - Repeated Exposure	No information available.
Aspiration Hazard	No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Do not allow product to enter the environment uncontrolled.

Unknown Aquatic Toxicity: 0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Ingredients	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Iron sulphate; FeSO ₄ +1H ₂ O	-	925: 96 h Poecilia reticulata mg/L LC50 static 0.56: 96 h Cyprinus carpio mg/L LC50 semi-static	-	152: 48 h Daphnia magna mg/L EC50 6.15 - 9.26: 48 h Daphnia magna mg/L EC50 Static
Copper sulphate anh; CuSO ₄	-	0.1: 96 h Oncorhynchus mykiss mg/L LC50	-	0.024: 48 h Daphnia magna mg/L EC50

12.2. Persistence and degradability

Persistence and Degradability: No information available.

12.3. Bioaccumulative potential

Bioaccumulation: No information available.

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

12.6. Other adverse effects

Mobility: No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Disposal of Wastes: Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging: Do not re-use empty containers. Dispose of as unused product.

Other Information: Use up product completely. Packaging material is industrial waste.

Section 14: TRANSPORT INFORMATION

IMO / IMDG

14.1
UN-No: 3077

14.2
Proper shipping name: Environmentally Hazardous Substance Solid N.O.S. (Dicopper oxide, Zinc oxide)

14.3
Hazard Class: 9

14.4
Packing group: III

14.5
Component **IMDG - Marine Pollutants**

Copper sulphate anh; CuSO ₄ 7758-98-7 (< 0.1%)	IMDG regulated marine pollutant (Listed in the index, listed under Copper sulphate, anhydrous, hydrates and solution)
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Marine Pollutant: This material meets the definition of a marine pollutant

Environmental Hazard Yes

14.6
EmS: F-A / S-F

Special Provisions 274, 335, 966, 967

14.7
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not regulated

ADR/RID

14.1
UN-No: 3077

14.2
Proper shipping name: Environmentally Hazardous Substance Solid N.O.S. (Dicopper oxide, Zinc oxide)

14.3
Hazard Class: 9

14.4
Packing group: III

14.5
Environmental Hazard Yes

14.6
Special Provisions 274

Tunnel restriction code E

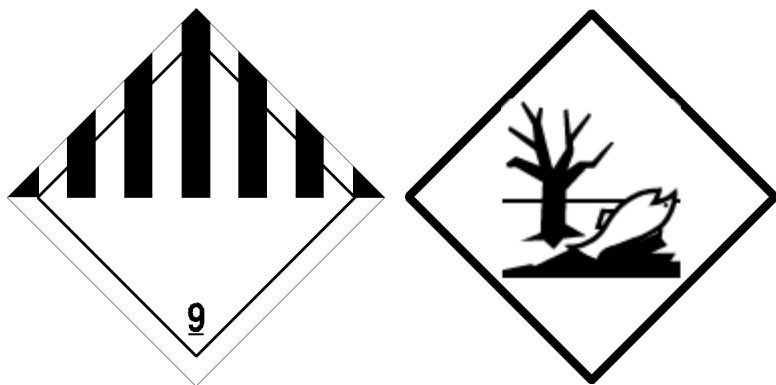
Limited Quantity 5 kg

Environmental Hazard Yes

Environmental Hazard Yes

IATA

14.1	
UN-No:	3077
14.2	
Proper shipping name:	Environmentally Hazardous Substance Solid N.O.S. (Dicopper oxide, Zinc oxide)
14.3	
Hazard Class:	9
14.4	
Packing group:	III
14.5	
Environmental Hazard	Yes
14.6	
Special Provisions	A97, A158

**Section 15: REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Belgium****Denmark**

Danish Sikkerhedsgruppe

No data available

France

ICPE

Classified installation: article 4511

Germany

LGK (Germany)

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Water Endangering Class (WGK):

1 (Everris classification)

Gefahrstoffverordnung (Germany) TRGS 511

Not regulated

Component	German WGK Section
Manganese sulphate; MnSO ₄ +1H ₂ O 7785-87-7 (5 - 10%)	class 1
Iron sulphate; FeSO ₄ +1H ₂ O 7720-78-7 (5 - 10%)	class 1
Zinc oxide; ZnO 1314-13-2 (1 - 5%)	class 2
Copper Oxide; CuO 1317-38-0 (0.1 - 1%)	class 1
Zinc sulphate mono hydrate; ZnSO ₄ +1H ₂ O 7446-19-7 (0.1 - 1%)	class 3
Copper sulphate anh; CuSO ₄ 7758-98-7 (< 0.1%)	class 2

European Union

REACH:

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not Applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not Applicable.

15.2 Chemical safety assessment**Chemical Safety Report**

Substance(s) usage is covered according to Reach regulation 1907/2006

Section 16: OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

H302 - Harmful if swallowed

H332 - Harmful if inhaled

H318 - Causes serious eye damage

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H373 - May cause damage to the kidneys/ liver/ eyes/ brain/ digestive system/ central nervous system through prolonged or repeated exposure if swallowed

H411 - Toxic to aquatic life with long lasting effects

H316 - Causes mild skin irritation

Key or legend to abbreviations and acronyms used in the safety data sheet

RID: Regulations Concerning the International Transport of Dangerous Goods by Rail

ICAO: International Civil Aviation Organization

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labeling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PNEC: Predicted No Effect Concentration

DNEL: Derived No-Effect Level

Reach: Registration, Evaluation, authorization of Chemicals

CLP: EU-GHS; Classification, Labelling and Packaging

OEL: Occupational Exposure Limit

TWA: Time Weighted Average

ATE: Acute Toxicity Estimate

EUH statement: CLP (EU) specific hazard statement

Classification procedure:

- Calculation method
- Expert judgment and weight of evidence determination

Key literature references and sources for data

According to EC Regulation 1907/2006 (Reach), Regulation EU No. 2015/830
Regulation (EC) No 1272/2008

Prepared by: Regulatory Affairs Department (INFO-MSDS@EVERRIS.COM)

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

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