



Material Safety Data Sheet

According to EC Directive 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.: 8861.02.01
 Product name: Osmocote Exact Hi End 8-9M

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

Email: INFO-MSDS@Scotts.com

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
Boric acid, H ₃ BO ₃	10043-35-3	< 1%	233-139-2	NE
Sodium molybdate, Na ₂ MoO ₄ +2H ₂ O	7631-95-0	< 1%	231-298-2	NE
Zinc sulphate mono hydrate, ZnSO ₄ +1H ₂ O	7446-19-7	< 1%	231-793-3	N;R50/53 Xi;R36/38

Components	CAS-No	Weight %	EC-No.	Classification
Copper sulphate, CuSO ₄	7758-98-7	< 1%	231-847-6	N;R50/53 Xi;R36/38 Xn;R22
Ammonium nitrate, NH ₄ NO ₃	6484-52-2	> 25%	229-347-8	O;R08
Calcium sulphate dihydrate, CaSO ₄ +2H ₂ O	10101-41-4	1 - 5%	231-900-3	NE
Magnesium oxide, MgO	1309-48-4	< 1%	215-171-9	NE
Iron sulphate, FeSO ₄ +1H ₂ O	7720-78-7	< 1%	231-753-5	Xn;R22
Potassium nitrate, KNO ₃	7757-79-1	10 - 25%	231-818-8	O;R08
Manganese sulphate, MnSO ₄	7785-87-7	< 1%	232-08-99	N;R51/53 Xn;R48/20/22

NE = Non-Established

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

4. FIRST AID MEASURES

- General advice:** Possible symptoms are coughing and/or dyspnoea. If symptoms persist, call a physician.
- Ingestion:** If conscious, drink plenty of water. Do not induce vomiting. Rinse mouth. Consult a physician if necessary.
- Inhalation:** Dusty conditions are unlikely if product is used as intended. However, if prolonged inhalation of dust occurs, remove victim 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. Rinse with plenty of water.
- Eye contact:** Flush eyes with water as a precaution. If eye irritation persists, consult a specialist.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
Water.

Unsuitable extinguishing media:
Dry powder, Sand, Foam, CO₂

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

Burning produces obnoxious and toxic fumes. In case of fire, cool with water or waterspray. In case of fire, the product will smoulder even without the presence of external oxygen. In these conditions the product will show self sustaining decomposition. The best method to extinguish the fire is to cool the decomposition front with water.

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.

Specific methods:

In case of fire separate from centre of fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Avoid dust formation. Sweep-up to prevent slipping hazard.

Environmental precautions:

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

Methods for cleaning up:

Shovel or sweep up.

7. HANDLING AND STORAGE

Handling:**Technical measures/precautions:**

Avoid dust formation.

Safe handling advice:

Keep away from flammable material. When using do not eat or drink.

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.

Incompatible products:

Oxidising and spontaneously flammable products

Specific use(s):

Granulated fertilizer.

Packaging material:

Bags or Bulk

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:

Not applicable.

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

Boric acid, H3BO3

Belgium - 8 Hr VLE	2 mg/m ³ TWA
Germany TRGS900:	0.5 mg/m ³ TWA
Portugal - TWAs	2 mg/m ³ TWA

Sodium molybdate, Na2MoO4+2H2O

Belgium - 8 Hr VLE	5 mg/m ³ TWA
Czech Republic OEL	= 5 mg/m ³ TWA
Finland - Occupational Exposure Limits - 8 hour	6 mg/m ³
France - Valeurs Limites d'exposition (VLE)	5 mg/m ³
France INRS (VME)	5 mg/m ³ VME
Netherlands - OEL - MACs:	5 mg/m ³ MAC
Norway - 8 h:	5 mg/m ³ TWA
Portugal - TWAs	0.5 mg/m ³ TWA
Spain - Valores Limite Ambientales - VLE	5 mg/m ³ VLA-ED
Sweden - OEL - 8 Hour	10 mg/m ³ LLV
	5 mg/m ³ LLV

Copper sulphate, CuSO4

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

Ammonium nitrate, NH4NO3

Czech Republic OEL	= 10.0 mg/m ³ TWA
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Calcium sulphate dihydrate, CaSO4+2H2O

Belgium - 8 Hr VLE	10 mg/m ³ TWA
France INRS (VME)	10 mg/m ³ VME
Germany TRGS900:	6 mg/m ³ TWA
Germany (DFG) - MAK	1.5 mg/m ³ MAK
	4 mg/m ³ MAK
Netherlands - OEL - MACs:	0.5 mg/m ³ MAC
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 TWA
	4 mg/m ³ TWA

Magnesium oxide, MgO

Austria - MAKs	6 mg/m ³
Belgium - 8 Hr VLE	10 mg/m ³
Czech Republic OEL	= 5 mg/m ³ 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 sulphate, FeSO4+1H2O

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/m³
STEL (15 min) 2mg/m³*Manganese sulphate, MnSO4*

Belgium - 8 Hr VLE

0.2 mg/m³

Czech Republic OEL

= 1 mg/m³ TWA

Finland - Occupational Exposure Limits - 8 hour

0.5 mg/m³

Germany TRGS900:

0.5 mg/m³ TWA

Germany (DFG) - MAK

0.5 mg/m³ MAK

Netherlands - OEL - MACs:

1 mg/m³

Norway - 8 h:

2.5 mg/m³

Portugal - TWAs

0.2 mg/m³ TWA

Spain - Valores Limite Ambientales - VLE

0.2 mg/m³ VLA-ED

Sweden - OEL - 8 Hour

0.1 mg/m³ LLV0.2 mg/m³ LLV

UK EH40 WEL:

5 mg/m³**9. PHYSICAL AND CHEMICAL PROPERTIES****General Information**

Physical State: Solid
Appearance: Granular
Color: Brown, Greenish
Odor: No information available

Important Health Safety and Environmental Information

Bulk density: 990 - 1036 kg/m³
Solubility: Coating not soluble, release nutrients through coating
Explosive properties: Doesn't present explosion hazard
Flammability (solid, gas): Non-flammable

Other information

Oxidising properties: Incompatible with oxidising agents.

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. Hazardous decomposition products:.. Poisonous gasses/vapours .

11. TOXICOLOGICAL INFORMATION**Component information**

Sodium molybdate, Na₂MoO₄+2H₂O

LD50/oral/rat = 4000 mg/kg

Zinc sulphate mono hydrate, ZnSO₄+1H₂O

LD50/oral/rat = 2949 mg/kg

Copper sulphate, CuSO₄

LD50/oral/rat = 960 mg/kg

Ammonium nitrate, NH₄NO₃

LD50/oral/rat = 410 mg/kg

Iron sulphate, FeSO₄+1H₂O

LD50/oral/rat = 1389 mg/kg

Potassium nitrate, KNO₃

LD50/oral/rat = 3750mg/kg

Manganese sulphate, MnSO₄

LD50/oral/rat = 9 g/kg

Product information

LD50/oral/rat = > 10 gr/kg

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:** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea

12. ECOLOGICAL INFORMATION

Product information

Aquatic toxicity:

No ecological information is known on the product.

Water Endangering Class (WGK): 1 (Scotts classification)

Component information

Sodium molybdate, Na₂MoO₄+2H₂O

Ecotoxicity effects LC50/96h/rainbow trout => 2800 g/l

Zinc sulphate mono hydrate, ZnSO₄+1H₂O

Ecotoxicity effects EC50/48h/daphnia =1.7 mg/l

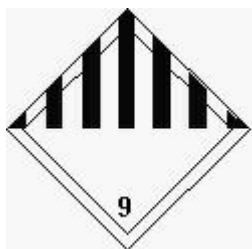
*Copper sulphate, CuSO4***Ecotoxicity effects**

EC50/48h/daphnia =0.8 mg/l

*Ammonium nitrate, NH4NO3***Ecotoxicity effects**EC50/48h/daphnia =100 µg/l
LC50/96h/rainbow trout =10 µg/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*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:** N.A.**IMO / IMDG****UN-No:** 2071
Proper shipping name: AMMONIUM NITRATE BASED FERTILIZER
Hazard Class: 9
Packing group: III



15. REGULATORY INFORMATION

Indication of danger:

This product does not have to be classified according to the EU regulations.

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

16. OTHER INFORMATION

Text of R Phrases mentioned in Section 2

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