

SAFETY DATA SHEET

Copper oxychloride

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name Copper oxychloride
Product number FC145372
CAS number 1332-40-7
EC number 603-724-0

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

Identified uses Laboratory reagent. Manufacture of substances. Research and development.

1.3. Details of the supplier of the safety data sheet

Supplier Progreen Weed Control Solutions Ltd
Unit 7, Spalding Road Business Park
Bourne, Lincs, PE10 9LF
Tel 01778 394052

1.4. Emergency telephone number

Emergency telephone +44 7860 215 869

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified
Health hazards Acute Tox. 4 - H302
Environmental hazards Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

2.2. Label elements

EC number 603-724-0

Pictogram



Signal word Warning

Hazard statements
H302 Harmful if swallowed.
H410 Very toxic to aquatic life with long lasting effects.

Copper oxychloride

Precautionary statements	<p>P270 Do not eat, drink or smoke when using this product.</p> <p>P273 Avoid release to the environment.</p> <p>P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.</p> <p>P391 Collect spillage.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
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2.3. Other hazards

No data available.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name	Copper oxychloride
CAS number	1332-40-7
EC number	603-724-0
Chemical formula	$3\text{Cu}(\text{OH})_2 \cdot \text{CuCl}_2$

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Get medical advice/attention if you feel unwell.
Inhalation	Remove person to fresh air and keep comfortable for breathing. If breathing stops, provide artificial respiration. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention if symptoms are severe or persist.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention if symptoms are severe or persist.
Skin contact	Remove contaminated clothing. Rinse with water. Continue to rinse for at least 15 minutes. Wash contaminated clothing before reuse. Get medical attention if symptoms are severe or persist.
Eye contact	Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist.

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

General information	See Section 11 for additional information on health hazards.
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4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
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5.2. Special hazards arising from the substance or mixture

Specific hazards	None known.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Hydrogen chloride (HCl). Copper.

5.3. Advice for firefighters

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Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents. Use protective equipment appropriate for surrounding materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid inhalation of dust and vapours. Provide adequate ventilation. Keep unnecessary and unprotected personnel away from the spillage.

6.2. Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into suitable waste disposal containers and seal securely. Clear up spills immediately and dispose of waste safely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Wear protective clothing as described in Section 8 of this safety data sheet. Wash hands thoroughly after handling. Provide adequate ventilation. Avoid generation and spreading of dust. Avoid contact with skin and eyes. Avoid inhalation of dust and vapours.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Keep container tightly closed. Store at room temperature.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

Long-term exposure limit (8-hour TWA): WEL 1 mg/m³ dust

Short-term exposure limit (15-minute): WEL 2 mg/m³ dust

WEL = Workplace Exposure Limit

8.2. Exposure controls

Appropriate engineering controls Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

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Hand protection	Wear protective gloves. To protect hands from chemicals, gloves should comply with European Standard EN374.
Other skin and body protection	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Particulate filters should comply with European Standard EN143. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.
Environmental exposure controls	Keep container tightly sealed when not in use.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Solid.
Colour	Blue-green. to Blue.
Odour	No data available.
Odour threshold	No data available.
pH	pH (diluted solution): 7.6 at 10 at 20 °C
Melting point	No data available.
Initial boiling point and range	No data available.
Flash point	No data available.
Evaporation rate	No data available.
Flammability (solid, gas)	No data available.
Upper/lower flammability or explosive limits	No data available.
Vapour pressure	No data available.
Vapour density	No data available.
Relative density	No data available.
Solubility(ies)	No data available.
Partition coefficient	No data available.
Auto-ignition temperature	No data available.
Decomposition Temperature	No data available.
Viscosity	No data available.
Explosive properties	No data available.
Oxidising properties	No data available.

9.2. Other information

Molecular weight

427.13

SECTION 10: Stability and reactivity

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10.1. Reactivity

Reactivity No data available.

10.2. Chemical stability

Stability Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions No data available.

10.4. Conditions to avoid

Conditions to avoid No data available.

10.5. Incompatible materials

Materials to avoid Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Hydrogen chloride (HCl). Copper.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀) Acute Tox. 4 - H302 Harmful if swallowed.

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

IARC carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

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Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard Not relevant. Solid.

General information

Dust may irritate the eyes and the respiratory system. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation

Dust may irritate the respiratory system. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

Ingestion

May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.

Skin contact

Prolonged contact may cause dryness of the skin.

Eye contact

Dust may cause slight irritation.

Route of exposure

Ingestion Inhalation Skin and/or eye contact

Target organs

No specific target organs known.

SECTION 12: Ecological Information

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

12.1. Toxicity

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

Acute toxicity - aquatic invertebrates

EC₅₀, 48 hour: 0.5 mg/l, Daphnia magna

Chronic aquatic toxicity

NOEC 0.01 < NOEC ≤ 0.1

Degradability Non-rapidly degradable

M factor (Chronic) 1

12.2. Persistence and degradability

Persistence and degradability The degradability of the product is not known.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient No data available.

12.4. Mobility in soil

Mobility No data available.

12.5. Results of PBT and vPvB assessment

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Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	3077
UN No. (IMDG)	3077
UN No. (ICAO)	3077
UN No. (ADN)	3077

14.2. UN proper shipping name

Proper shipping name (ADR/RID) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper oxychloride)

Proper shipping name (IMDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper oxychloride)

Proper shipping name (ICAO) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper oxychloride)

Proper shipping name (ADN) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper oxychloride)

14.3. Transport hazard class(es)

ADR/RID class	9
ADR/RID classification code	M7
ADR/RID label	9
IMDG class	9
ICAO class/division	9
ADN class	9

Transport labels



14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ADN packing group	III

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14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

EmS F-A, S-F

ADR transport category 3

Emergency Action Code 2Z

Hazard Identification Number 90
(ADR/RID)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations	Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. IATA: International Air Transport Association. ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air. IMDG: International Maritime Dangerous Goods. CAS: Chemical Abstracts Service. ATE: Acute Toxicity Estimate. LC ₅₀ : Lethal Concentration to 50 % of a test population. LD ₅₀ : Lethal Dose to 50% of a test population (Median Lethal Dose). EC ₅₀ : 50% of maximal Effective Concentration. PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Very Persistent and Very Bioaccumulative.
Training advice	Only trained personnel should use this material.

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Revision date	13/11/2017
Revision	1
SDS number	144926
Hazard statements in full	H302 Harmful if swallowed. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



SAFETY DATA SHEET
MANTRAC DF (HUK0282)

Page 1
Issued: 18/07/2006
Revision No: 1

Sent to: Yara UK

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

Product name: MANTRAC DF (HUK0282)

Product code: HUK0282

Use / description of product: For professional use in agriculture. See label for details. Harmful. Dangerous for the environment.

Company name: Yara Phosyn Ltd.

Manor Place, Wellington Road
The Industrial Estate
Pocklington
York
YO42 1DN
United Kingdom
Tel: +44 (0) 1759 302 545
Fax: +44 (0) 1759 303 650

2. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous ingredients: MANGANESE SULPHATE >75%

EINECS: 232-089-9 CAS: 7785-87-7

[Xn] R48/20/22; [N] R51/53

3. HAZARDS IDENTIFICATION

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

4. FIRST AID MEASURES (SYMPTOMS)

Skin contact: There may be mild irritation at the site of contact.

Eye contact: There may be irritation and redness.

Ingestion: There may be soreness and redness of the mouth and throat. There may be difficulty swallowing. Nausea and stomach pain may occur. There may be vomiting.

Inhalation: Absorption through the lungs can occur causing symptoms similar to those of ingestion.

4. FIRST AID MEASURES (ACTION)

Skin contact: Wash immediately with plenty of soap and water.

Eye contact: Bathe the eye with running water for 15 minutes. Consult a doctor.

Ingestion: Wash out mouth with water. Do not induce vomiting. If conscious, give half a litre of water to drink immediately. Consult a doctor.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. Consult a doctor.

[cont...]

SAFETY DATA SHEET

MANTRAC DF (HUK0282)

5. FIRE-FIGHTING MEASURES

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used.

Exposure hazards: In combustion emits toxic fumes.

Protection of fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Refer to section 8 of SDS for personal protection details. Do not create dust. Mark out the contaminated area with signs and prevent access to unauthorised personnel. If outside do not approach from downwind.

Environmental precautions: Do not discharge into drains or rivers.

Clean-up procedures: Transfer to a closable, labelled salvage container for disposal by an appropriate method.

7. HANDLING AND STORAGE

Handling requirements: Ensure there is sufficient ventilation of the area. Avoid the formation or spread of dust in the air. Avoid direct contact with the substance.

Storage conditions: Store in cool, well ventilated area. Keep container tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Hazardous ingredients: MANGANESE SULPHATE

WEL (8 hr exposure limit): 0.5mgm-3 (Mn)

Engineering measures: Ensure there is sufficient ventilation of the area.

Respiratory protection: Respiratory protective device with particle filter. Particle filter class P2S (EN143).

Hand protection: Protective gloves.

Eye protection: Safety glasses. Ensure eye bath is to hand.

Skin protection: Protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

State: Powder

Colour: White

Odour: Odourless

Oxidising: Non-oxidising (by EC criteria)

Solubility in water: Soluble

pH: 7 (5% in water)

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to avoid: Heat.

Materials to avoid: Strong oxidising agents. Strong acids.

Haz. decomp. products: In combustion emits toxic fumes.

SAFETY DATA SHEET

MANTRAC DF (HUK0282)

11. TOXICOLOGICAL INFORMATION

Chronic toxicity: Danger of serious damage to health by prolonged exposure through inhalation. Danger of serious damage to health by prolonged exposure if swallowed.

Routes of exposure: Refer to section 4 of SDS for routes of exposure and corresponding symptoms.

12. ECOLOGICAL INFORMATION

Mobility: Soluble in water.

Persistence and degradability: All nutrients present are fundamentally inorganic and persistent.

Bioaccumulative potential: The product is designed to accumulate elements in crops to the benefit of their nutrition. There is no adverse bioaccumulation potential in mammals where the product has been used as recommended.

Other adverse effects: Toxic to aquatic organisms.

13. DISPOSAL CONSIDERATIONS

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

14. TRANSPORT INFORMATION**ADR / RID**

UN no: 3077

ADR Class: 9

Packing group: III

Classification code: M7

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (MANGANESE SULPHATE)

Labelling: 9

Hazard ID no: 90

**IMDG / IMO**

UN no: 3077

Class: 9

Packing group: III

EmS: F-A,S-F

Marine pollutant: .

Labelling: 9

IATA / ICAO

UN no: 3077

Class: 9

Packing group: III

Packing instructions: 911

Labelling: 9

15. REGULATORY INFORMATION

Hazard symbols: Harmful.

Dangerous for the environment.



Risk phrases: 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.

Safety phrases: S22: Do not breathe dust.

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

Water hazard class: 1 Classification by VwVwS

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Risk phrases used in s.2: 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.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.



Prevention	P201- P261- P264- P270- P271- P273- P280-	Obtain special instructions before use. Avoid breathing dust/fumes/gas/mist vapour/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear eye protection/face protection.
Response	P301+312- P305+351+338- P304+340- P308+319-	IF SWALLOWED: Call a POISON CENTRE or Doctor/Physician, if you feel unwell: Rinse mouth IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Get medical advice/attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF EXPOSED or concerned: Get medical advice/attention.
Storage	P403+223- P405-	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	P502-	Dispose of contents and container in accordance with all local, regional, national and international regulations
Hazard symbol(s)		
Risk Phrases	R20- R22- R41- R48- R50/53-	Harmful by inhalation. Harmful if swallowed. Risk of serious damage to eyes. Danger of serious damage to health by prolonged exposure. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety Phrases	S2- S22- S26- S29- S39- S46- S60- S61-	Keep out the reach of children. Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains. Wear eye/face protection. If swallowed, seek medical advice immediately and show this container or label. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheet.
Hazardous ingredients		Zinc sulphate (anhydrous), Zinc oxide, calcium oxide, iron (II) sulphate, Manganese sulphate.
Supplemental label elements		Not applicable.



2.3 Other Hazards Not available.

SECTION 3 Composition/Information on Ingredients

EUROPE

<u>Identifiers</u>	<u>%</u>	<u>Classification</u>		<u>Type</u>
		<u>67/548/EEC</u>	<u>Regulation (EC) No. 1272/2008 [CLP]</u>	
Zinc sulphate (anhydrous)				
REACH: 01-2119474684-XX-XXXX	29.8-56.3	Xn;R22	Acute Tox.4 – H302	[1]
EC: 231-793-3		Xi; R41	Eye Dam.1 – H318	
CAS: 7733-02-0		N; R50/53	Aquatic Chronic 1 – H410	
Index: 030-006-00-9				
Zinc oxide				
REACH: 01-2119463881-XX-XXXX	10.5-16.7	N; R50/53	Aquatic Chronic 1 – H410	[1] [2]
EC: 215-222-5				
CAS: 1314-13-2				
Index: 030-013-00-7				
Calcium sulphate				
REACH: 01-2119444918-XX-XXXX	2.4-10.1	Not classified	Not classified	[2]
EC: 231-900-3				
CAS: 7778-18-9				
Iron (II) sulphate				
REACH: 05-2115282495-XX-XXXX	0.1-7.7	Xn;R22	Acute Tox.4 – H302	[1] [2]
EC: 231-753-5		Xi; R36/38	Skin Irrit.2 – H315	
CAS: 7720-78-7			Eye irrit.2 – H319	
Index: 026-003-00-7				
Calcium oxide				
REACH: 05-2115149261-XX-XXXX	1.2-4.0	Xi; R41/37/28	Eye Dam.1 – H318	[1] [2]
EC: 215-138-9			Skin Irrit.2 – H315	
CAS: 1305-78-8			STOT SE 3 – H335	

EUROPE (cont.)

<u>Identifiers</u>	<u>%</u>	<u>Classification</u>		<u>Type</u>
		<u>67/548/EEC</u>	<u>Regulation (EC) No. 1272/2008 [CLP]</u>	
Manganese sulphate				
REACH: 05-2115283575-XX-XXXX	0.3-1.6	Xn; R48/20/22	Eye Dam.1 – H318	[1] [2]
EC: 232-089-9		N; R51/53	STOT RE 2 – H373	
CAS: 7785-87-7			Aquatic Chronic 2 – H411	
Index: 025-003-00-4				



Mill Scale (Ferrous metal)

The oxidised surface of steel produced during reheating, conditioning, hot rolling, and hot forming operations. This substance is usually removed by process waters used for descaling, roll and material cooling, and other purposes. It is subsequently recovered by gravity separation techniques. Composed primarily of high-purity iron oxides. May contain varying amounts of other oxides, elements, and trace compounds.

REACH: 01-2119458865-XX-XXXX 6.7-15.3 Not classified Not classified -
EC: 266-007-8
CAS: 65996-74-9

Magnesium oxide

REACH: Exempted under Annex V 0.8-1.1 Not classified Not classified [2]
EC: 215-171-9
CAS: 1309-48-4

Magnesium sulphate

REACH: 05-2115282963-XX-XXXX 3.6-18.1 Not classified Not classified -
EC: 231-298-2
CAS: 7487-88-9

Trimanganese tetraoxide

REACH: 05-2115285610XX-XXXX 0.2-0.4 Not classified Not classified [2]
EC: 215-266-5
CAS: 1317-35-7

Urea

REACH: 01-2119463277-XX-XXXX 2.3-6.9 Not classified Not classified -
EC: 266-007-8
CAS: 65996-74-9

See Section 16 for full text of the R-Phrases declared above. See Section 16 for full text on the H-Statements declared above.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBT or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type 1

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4 First Aid Measures

4.1 Description of first aid measures

Eye contact Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a Physician.



Inhalation	Remove the victim into fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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

Potential acute health effects

Eye contact	Severely irritating to eyes. Risk of serious damage to eyes.
Inhalation	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	May cause skin irritation.
Ingestion	Harmful if swallowed.

Over exposure signs/symptoms

Eye contact	Adverse symptoms may include the following: pain or irritation, water, redness.
Inhalation	No additional information.
Skin contact	No additional information.
Ingestion	No additional information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	No specific treatment. No additional remarks.

SECTION 5 Firefighting Measures

5.1 Extinguishing media

Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	None known.

5.2 Special hazards arising from the substance or mixture

Hazard from the substance or mixture	No specific fire or explosion hazard.
--------------------------------------	---------------------------------------



Hazardous thermal decomposition products Decomposition products may include the following materials:
carbon dioxide, carbon monoxide, nitrogen oxides, sulphur oxides, metal oxide/oxides.

5.3 Advice for firefighters

Special protective actions
For fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. This material is very toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Special protective equipment
for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming with European standard EN 469 will provide a basic level of protection for chemical incidents.

Additional information

No additional remark.

SECTION 6 Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For Emergency Responders

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also Section 8 for additional information on hygiene measures.

6.2 Environmental precautions

Avoid dispersal of spilled material and runoff into waterways, drains, and sewers. Inform relevant authorities if the product has caused environmental pollution (sewers or waterways).

6.3 Methods and material for containment and cleaning up

Small spill

Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licenced waste disposal contractor.

Large spill

Move containers from spill area. Approach release from upwind. Prevent entry into sewers, watercourses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licenced waste disposal contractor.

6.4 Reference to other sections

Please see section 1 for Emergency Contact Information.

Please see section 8 for information on appropriate Personal Protection equipment.

Please see section 13 for additional Waste Treatment Information.

SECTION 7 Handling and Storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).



7.1 Precautions for safe handling

Protective measures Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. Refer to special instructions/safety data sheet. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Keep out of reach of children. .

Advice on General Occupational Hygiene Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Condition for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in an unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations Fertiliser with micronutrients.
Industrial Sector Specific No additional information.
Solutions

SECTION 8 Exposure Control/Personal Protection

The information in this section contains generic advice and guidance. This list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

EUROPE

EH40/2005 WELs (United Kingdom (UK), 8/2007)

Iron (II) Sulphate STEL: 2mg/m³, (as Fe) 15 minute(s)
WEL: 1mg/m³, (as Fe) 8 hour(s)

Calcium oxide TWA: 2mg/m³, (8 hour(s)

Manganese sulphate TWA 0.5mg/m³, as (Mn) 8 hour(s)

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

Derived effect levels

<u>Product/ingredient name</u>	<u>Type</u>	<u>Exposure</u>	<u>Value</u>	<u>Population</u>	<u>Effects</u>
None					

Predicted effect concentrations

<u>Product/Ingredient Name</u>	<u>Type</u>	<u>Compartment Detail</u>	<u>Value</u>	<u>Method Detail</u>
None				



8.2 Exposure Controls

Appropriate engineering controls: No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/Face Protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to dusts.
Dust production: dust mask with filter type R3.

Skin protection

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical State	Solid
Colour	Brown
Odour	Odourless
Odour threshold	Not available
pH	Not applicable
Melting point/freezing point	>229°C
Initial Boiling point/ Boiling range	Not applicable
Flash point	Non-flammable
Evaporation rate	Not applicable
Flammability (solid/gas)	Non-flammable
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	Not applicable
Vapour density	Not applicable



Relative density	~3.35 g/cm ³
Solubility	In water: 210 g/l
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Non-flammable
Decomposition temperature	>229°C
Viscosity	Not applicable
Explosive properties	Non-explosive in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and shocks and mechanical impacts.
Oxidising properties	Not an oxidiser

9.2 Other Information No additional information.

SECTION 10 Stability and Reactivity

10.1 Reactivity No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical Stability The product is stable.

10.3 Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid No specific data.

10.5 Incompatible materials No specific data.

10.6 Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11 Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

Zinc Sulphate (anhydrous)	LD50	Oral	Rat - Male	2280 mg/kg	-
Zinc Oxide	LD50	Oral	Rat –Male, Female	>5000 mg/kg	-
Urea	LD50	Oral	Rat – Male, Female	14300 mg/kg	-
Iron Sulphate	LD50	Oral	Rat	533 mg/kg	-
	LD50	Oral	Rat	319 mg/kg	-
	LD50	Subcutaneous	Rat	155 mg/kg	-
	LDLo	Oral	Rat	4.5 mg/kg	-
	TDLo	Eyes	Rat	18229 ng/kg	-
TDLo	Intratracheal	Rat	38 g/kg	-	

Conclusion/Summary: Toxic to humans or animal life.



Irritation/Corrosion

<u>Product/Ingredient Name</u>	<u>Result</u>	<u>Species</u>	<u>Score</u>	<u>Exposure</u>	<u>Observation</u>
Zinc Sulphate (anhydrous)	Eyes – Moderate irritation	Rabbit	-	-	-
	Eyes – Redness of the conjunctivae	Rabbit	2.7	1 minute(s)	48 hours
	Eyes – Edema of the conjunctivae	Rabbit	2.7	1 minute(s)	48 hours
Zinc Oxide	Skin – Edema	Mouse	0	1 minute(s)	5 days
	Skin – Edema	Rabbit	0	1 minute(s)	7 days
	Eyes – Redness of the conjunctivae	Rabbit	<=1	24 hours	72 hours
Calcium Oxide	Skin – Erythema/Eschar	Rabbit	0	24 hours	
	Skin – Edema	Rabbit	0	24 hours	
	Eyes – Cornea opacity	Rabbit	4	-	-
Manganese Sulphate	Skin – Erythema/Eschar	Rabbit	0	4 hours	72 hours
	Skin – Edema	Rabbit	0	4 hours	72 hours
Conclusion/Summary:	Skin	May be irritating to the skin.			
	Eyes	Possible eye irritant.			
	Respiratory	Irritating to respiratory system.			

Sensitisation

<u>Product/Ingredient Name</u>	<u>Route of exposure</u>	<u>Species</u>	<u>Result</u>
Zinc sulphate (anhydrous)	Skin	Mouse	Not sensitising
Manganese sulphate	Skin	Human	Not sensitising
Conclusion/Summary:	Skin –	Not considered a sensitiser.	
	Respiratory -	Not considered a sensitiser.	

Mutagenicity

<u>Product/Ingredient Name</u>	<u>Test</u>	<u>Experiment</u>	<u>Result</u>
None			
Conclusion/Summary:	Not classified as a human or animal carcinogen, teratogen or mutagen		

Carcinogenicity

<u>Product/Ingredient Name</u>	<u>Result</u>	<u>Species</u>	<u>Dose</u>	<u>Exposure</u>
Zinc Sulphate (anhydrous)	Negative-Oral-TC	Mouse – Female	-	7 days per week.
Conclusion/Summary:	Not classified as a human or animal carcinogen, teratogen or mutagen.			

Reproductive Toxicity

<u>Product/Ingredient Name</u>	<u>Maternal Toxicity</u>	<u>Fertility</u>	<u>Development Toxin</u>	<u>Species</u>	<u>Dose</u>	<u>Exposure</u>
Zinc Sulphate (anhydrous)	Negative	Positive	Negative	Rat- Male Oral:	4000 ppm	30 days; 7 days per wk
Conclusion/Summary:	MAY CAUSE ADVERSE REPRODUCTIVE EFFECTS IN MALES, BASED ON ANIMAL DATA.					



Teratogenicity

<u>Product/Ingredient Name</u>	<u>Result</u>	<u>Species</u>	<u>Dose</u>	<u>Exposure</u>
None				
Conclusion/Summary	Not classified as a human or animal carcinogenic, teratogen or mutagen			
Information on the likely Routes of exposure:	Inhalation, Ingestion.			
<u>Potential acute health effects</u>				
Eye contact	Severely irritating to eyes. Risk of serious damage to eyes.			
Inhalation	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.			
Skin contact	May cause skin irritation.			
Ingestion	Harmful if swallowed.			
<u>Symptoms related to the physical, chemical and toxicological characteristics</u>				
Eye contact	Adverse symptoms may include the following: Pain or irritation, watering, redness.			
Inhalation	No additional information.			
Skin contact	No additional information.			
Ingestion	No additional information.			

Potential chronic health effects

<u>Product/Ingredient Name</u>	<u>Result</u>	<u>Species</u>	<u>Dose</u>	<u>Exposure</u>
None known				
Conclusion/summary	Not available			
General	No known significant effects or critical hazards.			
Carcinogenicity	No known significant effects or critical hazards.			
Mutagenicity	No known significant effects or critical hazards.			
Teratogenicity	No known significant effects or critical hazards.			
Developmental effects	No known significant effects or critical hazards.			
Fertility effects	No known significant effects or critical hazards.			
Other information	No additional remarks.			

SECTION 12 – Ecological Information

12.1 Toxicity

Zinc Sulphate (anhydrous)

Fish – Onchorhynchus mykiss Alevin	Acute LC50	2.17 mg/l	Fresh water	96 hours
Fish – Oncorhynchus kisutch Juvenile (Fledgling, Hatchling, Weanling)	Acute LC50	0.82 mg/l	Fresh Water	96 hours
Fish – Pimephales promelas Newly or recently hatched	Acute LC50	0.78mg/l	Fresh Water	96 hours
Fish – Salmo trutta – Egg	Chronic NOEC	0.25 mg/l	Fresh Water	15 days
Culpea harengus - Egg	Chronic NOEC	0.025 mg/l	Marine Water	27



Zinc Oxide

Fish – Onchorhynchus mykiss Alevin	Acute LC50	2.17 mg/l	Fresh water	96 hours
Fish – Danio rario	Acute LC50	1.793 mg/l	Fresh Water	96 hours
Fish – Oncorhynchus kisutch - Egg	Acute LC50	0.82 mg/l	Fresh Water	96 hours

Calcium Sulphate

Fish – Gambusia affinis – Adult	Acute LC50	>56000000 ug/L	Fresh Water	96 hours
Lepomis macrochirus- (5.3 to 7.2cm – 3.5 to 3.9g)	Acute LC50	2980000 ug/L	Fresh Water	96 hours
Daphnia – Ceriodaphnia dubia <24 hours	Acute LC50	>1970000 ug/L	Fresh Water	48 hours
Fish – Pimephales promelas (1-7 days)	Acute LC50	>1970000 ug/L	Fresh Water	96 hours
Daphnia – Ceriodaphnia dubia <24 hours	Acute LC50	>1910000 ug/L	Fresh Water	48 hours

Iron Sulphate

Fish – Therapon humeralis	Acute LC50	45.1 mg/l	Fresh Water	96 hours
Fish – Cyrinus carpio	Acute LC50	2.67 mg/l	Fresh Water	96 hours
	Acute NOEC	52000 mg/l	Fresh Water	-

Manganese Sulphate

Fish – Agosoa chrysogaster – Juvenile (Fledgling, Hatchling, Weanling)	Acute C50	130 mg/l	Fresh Water	96 hours
Fish – Salmo trutta	Acute LC50	49.9 mg/l	Fresh Water	96 hours
Fish – Salvelinus fontinalis – Juvenile (Fledling, Hatchling, Weanling)	Acute LC50	5.1 mg/l	Fresh Water	96 hours

Conclusion/Summary May cause long lasting harmful effects to aquatic life.

12.2 Persistence and Degradability

12.3 Bio-accumulative Potential

<u>Product /Ingredient Name</u>	<u>LogPow</u>	<u>BCF</u>	<u>Potential</u>
Zinc Sulphate (anhydrous)	-0.07	-	low

12.4 Mobility in Soil

Soil/water partition coefficient (Koc)	No additional information available.
Mobility	No additional remarks

12.5 Results of PBT and vPvB assessment

PBT	Not applicable.
vPvB	Not applicable.

12.6 Other adverse effects

No known significant effects or critical hazards.

Section 13 - Disposal Considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal

The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licenced waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. | This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Hazardous Waste

The classification of the product may meet the criteria for a hazardous waste.

Packaging


Methods of disposal

The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14 – Transport Information

	<u>ADR/RID</u>	<u>ADN/ADNR</u>	<u>IMDG</u>	<u>IATA</u>
<u>14.1 UN Number</u>	3077	3077	3077	3077
<u>14.2 UN proper Shipping Name</u>	(zinc sulphate, (anhydrous))	(zinc sulphate, (anhydrous))	(zinc sulphate, (anhydrous)) Marine pollutant (anhydrous), (Zinc oxide)	(zinc sulphate, (anhydrous))
<u>14.3 Transport hazard class(es)</u>				
<u>14.4 Packing Group</u>	III	III	III	III
<u>14.5 Environmental hazards</u>	Yes	Yes	Yes	Yes
<u>14.6 Special precautions for user</u>	Not available	Classification applicable To tank vessels only.	Not available	Not available



Additional Information

Tunnel Code

(E)

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Section 15 – Regulatory Information

15.1 Safety, Health and Environmental Regulations/Legislation specific for the substance or mixture

EU Regulations (EC) No. 1907/2006 (REACH)

Annex XIV – List of substances subject to Authorisation Substances of very high concern. None of the components are listed.

Annex XVII – Restrictions of Manufacture Placing on the market and use of certain Dangerous substances, mixtures and articles. Restricted to professional users.

Other EU Regulations All components are listed or exempted.

Germany

Hazardous incident ordinance Applicable. Category: 9a – Dangerous for the environment.
Hazard class for water 3 Appendix No. 4
Technical instruction on air quality control TA-Luft Number 5.2.1: 57.2-100%
TA- Luft Class III – Number 5.2.2: 0.5-2%

Netherlands

Water Discharge Policy (ABM) Very toxic to aquatic organisms. Abatement effort: B

Sweden

15.2 Chemical Safety Assessment Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

Section 16 Other Information

Indicates information that has changed from previously issued version.

Abbreviations and Acronyms

ATE	Acute Toxicity Estimate
CLP	Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL	Derived No-Effect Level
EUH statement	CLP specific Hazard statement
PNEC -	Predicted No-Effect Level
RRN	REACH Registration Number

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Eye Dam. 1	H318
Acute oral toxicity 4	H302
Aquatic Chronic 1	H410
STOT-SE = Cat. 3	H335
STOT-RE = Cat.2	H373



Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

<u>Classification</u>	<u>Justification</u>
Eye Dam. 1 – H318	Evaluation
Acute oral toxicity 4 – H302	Evaluation
Aquatic Chronic 1 – H410	Evaluation
STOT-SE = Cat.3 – H335	Evaluation
STOT-RE = Cat.2 – H373	Evaluation

Europe

Full text of abbreviated H Statements

- H302 – Harmful if swallowed.
- H315 – Causes skin irritation.
- H318 – Causes serious eye damage.
- H319 – Causes serious eye irritation.
- H373 – May cause damage to organs through prolonged or repeated exposure.
- H400 – Very toxic to aquatic life.
- H410 – Very toxic to aquatic life with long lasting effects.
- H411 – Toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Acute Tox.4 – H302	Acute Toxicity: Oral	Category 4
Aquatic Acute.1 – H400	Aquatic Toxicity: (Acute)	Category 1
Aquatic Chronic 1 – H410	Aquatic Toxicity: (Chronic)	Category 1
Aquatic Chronic 2 – H411	Aquatic Toxicity (Chronic)	Category 2
Eye Dam. 1 – H318	Serious eye damage/irritation	Category 1
Eye Irrit. 2 – H319	Serious eye damage/irritation	Category 2
Skin Irrit. 2 – H315	Skin Corrosion/irritation	Category 2
STOT-SE3 - H335	STOT-SE = Specific Target Organ Toxicity -	Category 3
STOT RE2 – H373	Specific target Organ Toxicity (Repeated Exposure)	Category 2

Full text of abbreviated R Phrases

R22 - R48/20/22	Harmful if swallowed. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R41 R36/R38	Risk of serious damage to eyes. Irritating to eyes and skin.
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.

Full text of classifications
[DSD/DPD]

Xn	Harmful
Xi	Irritant
N	Dangerous for the environment

Date of revision	25/12/2011
Date of previous issue	No previous validation.
Version	1.01



DISCLAIMER

The information in the safety document applies only to the specific product detailed in Section 1 and is not necessarily correct for use with other chemicals/products.

The product information in this data sheet is, to the best knowledge of Angus Horticulture Ltd, correct at the date of publication.

The Manufacturer or Supplier does not accept liability for any loss or damage resulting from reliance on this information. Final determination of the suitability of any product is the responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, it cannot be guaranteed that these are the only hazards that exist.

Created 25/12/2011