# SAFETY DATA SHEET

## MANTLE

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

#### 1.1. Product identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>MANTLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product number</td>
<td>PHP003/5</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Identified uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foliar micronutrient fertiliser</td>
</tr>
</tbody>
</table>

#### 1.3. Details of the supplier of the safety data sheet

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Headland Amenity Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 Burr Elm Court</td>
</tr>
<tr>
<td></td>
<td>Main Street</td>
</tr>
<tr>
<td></td>
<td>Caldecote</td>
</tr>
<tr>
<td></td>
<td>Cambridge</td>
</tr>
<tr>
<td></td>
<td>Cambridgeshire</td>
</tr>
<tr>
<td></td>
<td>CB23 7NU</td>
</tr>
<tr>
<td></td>
<td>Tel. +44 (0)1223 491090</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:sds.enquiries@headlandamenity.com">sds.enquiries@headlandamenity.com</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contact person</th>
<th>Wendy Johnson</th>
</tr>
</thead>
</table>

#### 1.4. Emergency telephone number

| Emergency telephone | +44 (0)1223 491090 (9.00 - 5.00 GMT Mon-Fri) |

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Classification (EC 1272/2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical hazards</td>
</tr>
<tr>
<td>Health hazards</td>
</tr>
<tr>
<td>Environmental hazards</td>
</tr>
</tbody>
</table>

#### 2.2. Label elements

| Pictogram | |
|-----------| |

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Danger</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Hazard statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>H318 Causes serious eye damage.</td>
</tr>
<tr>
<td>H373 May cause damage to organs through prolonged or repeated exposure.</td>
</tr>
<tr>
<td>H411 Toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>
MANTLE

Precautionary statements

P260 Do not breathe dust.
P273 Avoid release to the environment.
P280 Wear protective gloves, protective clothing and eye protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/ doctor.
P314 Get medical advice/ attention if you feel unwell.
P391 Collect spillage.
P501 Dispose of contents/ container in accordance with national regulations.

Contains

MANGANESE SULPHATE, ZINC SULPHATE HEXAHYDRATE

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>MANGANESE SULPHATE</th>
<th>50-70%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 7785-87-7</td>
<td>EC number: 232-089-9</td>
</tr>
<tr>
<td>Classification</td>
<td>STOT RE 2 - H373</td>
</tr>
<tr>
<td>Aquatic Chronic 2 - H411</td>
<td></td>
</tr>
<tr>
<td>Classification (67/548/EEC or 1999/45/EC)</td>
<td>Xn; R48/20/21/22. N; R51/53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ZINC SULPHATE HEXAHYDRATE</th>
<th>10-30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 13986-24-8</td>
<td>EC number: 231-793-3</td>
</tr>
<tr>
<td>M factor (Acute) = 1</td>
<td>M factor (Chronic) = 1</td>
</tr>
<tr>
<td>Classification</td>
<td>Acute Tox. 4 - H302</td>
</tr>
<tr>
<td>Eye Dam. 1 - H318</td>
<td></td>
</tr>
<tr>
<td>Aquatic Acute 1 - H400</td>
<td></td>
</tr>
<tr>
<td>Aquatic Chronic 1 - H410</td>
<td></td>
</tr>
</tbody>
</table>

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Remove affected person from source of contamination. Get medical attention.

Ingestion
Rinse mouth thoroughly with water. Do not induce vomiting. Get medical attention.

Skin contact
Remove contaminated clothing immediately and wash skin with soap and water.

Eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Continue to rinse for at least 15 minutes.

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

Inhalation
There may be irritation of the throat with a feeling of tightness in the chest.

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

Skin contact
Skin contact may cause redness and irritation.
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Eye contact  There may be pain and redness. Profuse watering of the eyes. May cause blurred vision and serious eye damage.

4.3. Indication of any immediate medical attention and special treatment needed
Specific treatments  Eye bathing equipment should be available on the premises.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media  Use fire-extinguishing media suitable for the surrounding environment.
Unsuitable extinguishing media  None known.

5.2. Special hazards arising from the substance or mixture
Hazardous combustion products  Toxic gases or vapours.

5.3. Advice for firefighters
Special protective equipment for firefighters  Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Personal precautions  Avoid generation of dust. Treat the spilled material according to the instructions in the clean-up section. Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions
Environmental precautions  Avoid discharge into drains and the aquatic environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up  Place waste in labelled, sealed containers.

6.4. Reference to other sections
Reference to other sections  For personal protection, see Section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Usage precautions  Avoid any direct contact with the substance. Provide adequate ventilation. Avoid generation and spreading of dust.
Advice on general occupational hygiene  Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Promptly remove any clothing that becomes contaminated.

7.2. Conditions for safe storage, including any incompatibilities
Storage precautions  Store in tightly-closed, original container in a dry, cool and well-ventilated place.

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
MANGANESE SULPHATE
MANTLE

Long-term exposure limit (8-hour TWA): WEL 0.5 mg/m³ respirable dust
WEL = Workplace Exposure Limit

MANGANESE SULPHATE (CAS: 7785-87-7)

**DNEL**

- Workers - Dermal; systemic effects: 0.00414 mg/kg/day
- Workers - Inhalation; systemic effects: 0.2 mg/m³
- Consumer - Dermal; systemic effects: 0.0021 mg/kg/day
- Consumer - Inhalation; systemic effects: 0.043 mg/m³

**PNEC**

- Fresh water; 0.0128 mg/l
- Marine water; 0.0004 mg/l
- Sediment (Freshwater); 0.0114 mg/kg
- Sediment (Marine water); 0.0014 mg/kg
- Soil; 25.1 mg/kg
- STP; 56 mg/l

ZINC SULPHATE HEXAHYDRATE (CAS: 13986-24-8)

**DNEL**

- Workers - Inhalation; systemic effects: 1 mg/m³
- Workers - Dermal; systemic effects: 8.3 mg/kg
- Consumer - Oral; systemic effects: 0.83 mg/kg
- Consumer - Dermal; systemic effects: 8.3 mg/kg

**PNEC**

- Fresh water; 0.0206 mg/l
- Marine water; 0.0061 mg/l
- Sediment (Freshwater); 235.6 mg/kg
- Sediment (Marine water); 113 mg/kg
- Soil; 106.8 mg/kg
- STP; 0.0052 mg/l

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation.

Eye/face protection

Wear tight-fitting, chemical splash goggles or face shield. Ensure eye bath is available.

Hand protection

Wear protective gloves.

Other skin and body protection

Wear protective clothing.

Respiratory protection

Self-contained breathing apparatus must be available in case of emergency. Respiratory protective device with particle filter.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

**Appearance**

Solid.

**Colour**

Brown.

**pH**

No information available.

**Melting point**

No information available.

**Initial boiling point and range**

No information available.

**Flash point**

No information available.

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Evaporation rate  
No information available.

Vapour pressure  
No information available.

Relative density  
No information available.

Solubility(ies)  
No information available.

Partition coefficient  
No information available.

Viscosity  
No information available.

Oxidising properties  
Not known.

9.2. Other information

Other information  
No other relevant information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity  
Stable under recommended transport or storage conditions.

10.2. Chemical stability

Stability  
Stable under normal conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions  
Under normal conditions of storage and use, no hazardous reactions will occur.

10.4. Conditions to avoid

Conditions to avoid  
Avoid heat.

10.5. Incompatible materials

Materials to avoid  
Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

Hazardous decomposition products  
In combustion emits toxic fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg)  
3,333.33

Inhalation  
There may be irritation of the throat with a feeling of tightness in the chest.

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

Skin contact  
There may be irritation and redness at the site of contact.

Eye contact  
There may be pain and redness. Profuse watering of the eyes. May cause blurred vision and serious eye damage.
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Persistence and degradability  The product is biodegradable.

12.3. Bioaccumulative potential
Bioaccumulative potential  Bioaccumulation is unlikely.
Partition coefficient  No information available.

12.4. Mobility in soil
12.5. Results of PBT and vPvB assessment
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

SECTION 13: Disposal considerations

13.1. Waste treatment methods
General information  Dispose of waste product or used containers in accordance with local regulations. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

Disposal methods  Dispose of waste product or used containers in accordance with local regulations.

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. (CONTAINS MANGANESE SULPHATE, ZINC SULPHATE HEXAHYDRATE)
Proper shipping name (IMDG)  ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS MANGANESE SULPHATE, ZINC SULPHATE HEXAHYDRATE)
Proper shipping name (ICAO)  ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS MANGANESE SULPHATE, ZINC SULPHATE HEXAHYDRATE)
Proper shipping name (ADN)  ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS MANGANESE SULPHATE, ZINC SULPHATE HEXAHYDRATE)

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
MANTLE

Transport labels

14.4. Packing group

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

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 (ADR/RID)  90
Tunnel restriction code  (E)

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

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

SECTION 15: Regulatory information

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


15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Revision comments  This is first issue.
Revision date  01/11/2016
Revision  1
SDS number  20452
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Hazard statements in full

H302 Harmful if swallowed.
H318 Causes serious eye damage.
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.