

# PRODUCT SAFETY DATA SHEET

## STEM

### 1. † Identification of the Preparation and the Company:

Product Name: STEM

Function: A soluble micronutrient formulation for use in agriculture

#### Manufactured and Marketed by:

Headland Agrochemicals Ltd

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### 2. Hazards:

Hazard Symbol: CORROSIVE C

Risk Phrases: R34 Corrosive – causes burns

### 3. Composition/Information on Ingredients:

Chemical Name	CAS No	Class	%w/v
Manganese nitrate	10377-66-9	n/a	65.15

### 4. First Aid Measures:

Eyes: Irrigate with clean water for at least 15 minutes. Seek medical attention without delay.

Skin: Remove contaminated clothing. Wash thoroughly with soap and water. Seek medical attention if any irritation persists.

Ingestion: If swallowed drink plenty of water and seek medical advice

Inhalation: Remove from exposure and provide maximum ventilation

### 5. Fire Fighting Measures

The product will not burn but may react with reducing agents and will support combustion if the water carrier evaporates at high temperatures. If involved in a fire, fumes and vapours may be harmful and include oxides of nitrogen. Fire fighters should wear breathing apparatus.

Extinguishing media: Use dry chemical, foam, water spray, sand or earth.

Prevent entry of the product or contaminated fire-fighting water into watercourses ditches or drains. Advise the authorities if contamination of water is threatened or occurs. If possible, keep intact containers cool using water sprays.

### 6. Accidental Release (Spillage)

Wear suitable protective clothing (Refer to Section 8 below).

Cover the spillage with inert absorbent material (sand, earth etc), shovel up

and transfer to a container for later removal to a safe place for disposal. Do not absorb spillage onto any combustible materials e.g. cloths or sawdust.

Flush the area with plenty of water when all the spillage has been removed. Prevent the spillage from entering watercourses sewers or drains. Inform the authorities if contamination of water is threatened or occurs.

Launder any contaminated clothing immediately after use.

#### **7. Storage and Handling**

Keep in original container, tightly closed.

Keep cool and dry in a suitable chemical store under lock and key.

Do not store at temperatures below 5°C. Do not store in direct sunlight or near direct sources of heat.

#### **8. Exposure Controls / Personal Protection**

Wear coveralls, suitable protective gloves and face-shield when handling the concentrated product. Avoid breathing the spray mist when using.

Occupational Exposure Limits: TLV 0.2 mg/m<sup>3</sup> (TWA) (USA)

#### **9. Physical and Chemical Properties**

Appearance: a pink to pale brown clear liquid

Odour: Characteristic acidic odour

Specific Gravity: Approx. 1.47

Ph: < 1

Flashpoint: Will not burn but will support combustion if heated to dryness.

Explosivity: Not explosive.

Oxidising properties: Manganese nitrate is an oxidiser when dry.

Solubility: Completely disperses in water

#### **10. Stability and Reactivity**

Very stable. Stores for at least 2 years in original containers in normal chemical storage conditions. Store above 5°C.

Reactivity: manganese nitrate is an oxidising agent when dry. Avoid reducing agents and highly flammable materials.

#### **11. Toxicological Information**

Acute oral LD50: Not determined due to corrosivity

Acute dermal LD50: Not determined due to corrosivity

Irritancy: Causes burns

#### **12. Environmental Protection**

Ecotoxicity:

This product is expected to be of low toxicity to fish and other aquatic life.

Do not contaminate surface waters or ditches with chemical or used container.

Bioaccumulation:

This product is expected to biodegrade in the environment. Bio-accumulation is considered unlikely.

**13. Disposal of Unwanted Product and Used Containers**

Consult the local authorities before disposing of unwanted chemical.  
Triple-rinse and puncture used containers and dispose of as permitted by local authorities. Do not re-use containers for any purpose.

**14. Transport Information**

Road Transport:	Corrosive
UN Number:	1760
Proper Shipping Name:	Corrosive liquid, N.O.S. miscible with water
IMDG Class:	8
CPL Packing Group:	III

**15. Regulatory Information**

Hazard Symbol:	Corrosive C
Risk Phrases:	
R34	Corrosive – causes burns
Safety Phrases:	
S2	Keep out of reach of children
S23	Do not breathe vapours or spray mist
S24/25	Avoid contact with skin and eyes
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28	In case of contact with skin, wash immediately with plenty of water
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**16. Other Information**

The above information is intended to give health and safety guidance on the storage and transport of the substance or product to which it relates. It is not intended to apply to the use of the product, for which purpose the product label and any appropriate technical usage literature available should be consulted and any relevant licences, consents or approvals complied with.

The requirements or recommendations of any relevant site or working procedure, system or policy in force or arising from any risk assessment involving the substance or product should take precedence over any of the guidance contained in this safety data sheet where there is a difference in the information given. The information provided in this safety data sheet is accurate to the best of the issuer's available knowledge at the date of publication, and will be updated as and when appropriate. No liability will be accepted for any loss or damage resulting from any failure to take account of information or advice contained in this safety data sheet.

Further advice from: Headland Agrochemicals Ltd.

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