

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

**1.1 Product Identifier:** **COPPER MIXTURE**  
**UFI:** -  
**1.2 Relevant uses of the substance or mixture and uses advised against:**  
 Fertiliser  
**1.3 Manufacturer/Distributor:** Vitax Limited, Owen Street, Coalville, Leicestershire LE67 3DE  
 Tel: ++44 (0)1530 510060 Email: info@vitax.co.uk  
**1.4 Emergency Contact:** Tel: ++44 (0)1530 (Office Hours)  
**IRL ONLY:** In the event of emergency, call the National Poisons Information Centre, Beaumont Hospital at 01 809 2166 or 01 837 9964.

## 2. HAZARDS IDENTIFICATION

**2.1 Classification:** **Classification according to Regulation (EC) No 1272/2008 (EU-GHS/CLP)**  
 Eye Damage 1 H318 Causes serious eye damage  
 Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects  
**2.2 Label Elements:** (contains: Manganese sulphate E.C. 232-089-9, Copper oxychloride E.C. 215-572-9, Zinc oxide E.C. 215-222-5)



**Signal word:** Danger  
**Hazard statements:** H318 Causes serious eye damage  
 H411 Toxic to aquatic life with long lasting effects  
**Precautionary Statements:** P101 Read label before use  
 P102 Keep out of reach of children  
 P103 If medical advice is needed, have product label or container at hand  
 P280 Wear eye/face protection.  
 P305/351/338 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 or doctor/physician.  
 P391 Collect spillage  
 P501 Dispose of contents/container in accordance with local/national regulation  
**2.3 Other Hazards:** Mixture not classed as PBT or vPvB

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

Chemical Name	CAS-No./ EINECS-No.	Annex Index or REACH number	Symbol(s) and Phrases	Concentration [%]
Manganese Sulphate	10034-96-5/ 232-089-9	Index no.: 025-003-00-4 REACH registration no.: 01-2119456624-35	GHS05 Eye Damage 1, H318 Causes serious eye damage GHS08 STOT Rep. 2, H373 May cause damage to organs through prolonged or repeated exposure GHS09 Aqu. Tox. chron. 2, Toxic to aquatic life with long lasting effects	9.0
Copper oxychloride	215-572-9 1332-40-7 / 1332-65-6	-	GHS07 Acute Tox. 4 H302: Harmful if swallowed Acute Tox. Inhalation Cat 4 H332 Harmful by inhalation GHS09 Environmental Aquatic Acute 1 – H400 Very toxic to aquatic life Aquatic Chronic 1 - H410 Very toxic to aquatic life with long lasting effects GHS05 Eye Dam 1 H318: Causes serious eye damage	4.5
Zinc oxide	1314-13-2/ 215-222-5	Index no.: 030-013-00-7 REACH registration no.: 01-2119463881-32	GHS09 Aquatic Acute 1 - H400 Very toxic to aquatic life Aquatic Chronic 1 - H410 Very toxic to aquatic life with long lasting effects	2.7%
Kaolin	92704-41-1 296-473-8	-	-	>50%

Kaolin contains as impurities less than 1% respirable quartz CAS 14808-60-7 EC No. 238-878-4 classified as STOT RE1

## 4. FIRST AID MEASURES

### 4.1 Description of First Aid Measures

- Eye contact –** Rinse eyes cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison centre or doctor/physician.
- Skin contact –** Drench immediately with water. Remove any contaminated clothing and launder before re-use. Seek medical attention if symptoms persist or develop.
- Ingestion –** Do not induce vomiting. Wash out mouth with water and give water to drink. Seek medical attention if symptoms persist or develop.
- Inhalation –** If symptoms arise remove from source of exposure to fresh air; seek medical attention if symptoms persist or develop.

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

Causes serious eye damage

**4.3 Indication of immediate medical attention and special treatment needed:**

No information available

**5. FIRE FIGHTING MEASURES**

**5.1 Extinguishing Media:** Use foam, carbon dioxide, dry powder, sand. The mixture is not classified as flammable as such extinguishing media should also be chosen as appropriate for surrounding materials.

**5.2 Special hazards arising from substance or mixture:** Possible irritant fumes arising from combustion.

**5.3 Advice for firefighters:** Cool down containers/equipment exposed to heat with a water spray. Contain spread of extinguishing fluids (these fluids may be hazardous for the environment). Wear complete protective clothing and self-contained breathing apparatus.

**6. ACCIDENTAL RELEASE MEASURES**

**6.1 Personal Precautions:** Ensure adequate ventilation. Wear a suitable dust mask if dust is generated above exposure limits. Wear gloves and eye protection. Wash hands and exposed skin after handling.

**6.2 Environmental precautions:** Do not allow to enter drains, watercourses or sewers. If this product enters a water course or a sewer (including via contaminated soil & vegetation) in large quantities contact local water authority and inform the Environment Agency

**6.3 Methods and material for containment and cleaning up:** Sweep up spills carefully to minimise dust. Transfer to heavy duty plastic bags or drums and keep safe for disposal. .

**7. HANDLING & STORAGE**

**7.1 Precautions for Safe Handling:** Ensure good ventilation at workplace. Ensure good hygiene practices are observed. Do not eat, drink or smoke when handling this product. Do not breathe dust. Avoid contact with skin and eyes.

**7.2 Conditions for Safe Storage:** Store in original containers, tightly closed in a secure, well ventilated, cool but frost-free, dry area. Refer to manufacturer for maximum safe stacking height. Keep away from heat sources, combustible materials and strong oxidising agents.

**7.3 Specific end use:** Fertiliser.

**8. EXPOSURE CONTROLS/ PERSONAL PROTECTION**

**8.1 Control parameters:**

Name	STD	LTEL TWA 8hr		STEL 15 min		Notes
Manganese and its salts (as Mn)	WEL		0.5 mg/m3			
Inorganic dust	WEL		4 mg/m3 resp.dust			
Kaolin	WEL		2 mg/m3			
quartz	WEL		0.1 mg/m3			

WEL = Workplace exposure limits

**DNELs**

Figures stated are manganese sulphate.H<sub>2</sub>O

Industry Dermal Long Term 4.14 µg/kg/day

Industry Inhalation. Long Term 0.2 mg/m3

Consumer Dermal Long Term 2.1 µg/kg/day

Consumer Inhalation. Long Term 0.043 mg/m3

DNELs for the oral route, all "acute effects" and for "long-term local-effects" were not calculated and are not required for the "identified uses" covered in this SDS and the Chemical Safety Report (CSR).

**PNEC**

Freshwater	0.0128 mg/l
Marinewater	0.4 µg/l
Spills(freshwater)	30 µg/l
Sediment (Freshwater)	11.4 µg/kg
Sediment (Marinewater)	1.4 µg/kg
Soil	25.1 mg/kg
STP	56 mg/l

Soil & sediment PNEC values are mg/kg wet weight.

## 8.2 Exposure Controls:

### Personal protective equipment:

**General protective and hygienic measures:** The usual precautionary measures should be adhered to in the handling of the chemicals. Wear protective gloves and eye protection. Take off contaminated clothing and wash before reuse. Do not eat, drink or smoke when handling this product.

**Breathing equipment:** Dust Mask FFP2 Not required if all workplace limits are observed and good ventilation is ensured.

**Protection of hands:** Requirements according to EN 374 in natural rubber or PVC

**Eye protection:** Tightly sealed safety glasses.

**Body protection:** Protective work clothing to EN465/466/467.

## 9. PHYSICAL & CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties:

Appearance	pale green powder
Odour	none
pH	not available
Boiling point	not available
Melting point	not available
Flash point	not available
Flammability	not flammable
Autoflammability	none
Explosivity	none
Oxidising properties	none
Vapour Pressure	not available
Relative density	not available
Solubility	disperses in water

**9.2 Other information:** none

## 10. STABILITY & REACTIVITY

<b>10.1 Reactivity:</b>	no data
<b>10.2 Stability:</b>	Stable under normal conditions.
<b>10.3 Possibility of hazardous reactions</b>	Information not available
<b>10.4 Conditions to Avoid:</b>	Store away from heat
<b>10.5 Incompatible materials:</b>	Information not available.
<b>10.6 Hazardous Decomposition Products:</b>	Possible irritant fumes.

## 11. TOXICOLOGICAL INFORMATION

The mixture has not been assessed for toxicological effects, the mixture classification is given in section 2 based on individual component contents. Individual component hazards are given in section 3

### Toxicological information on individual components where available:

#### Manganese sulphate:

Acute Toxicity (Oral LD50)	2150 mg/kg Rat
Acute Toxicity (Dermal LD50)	Not determined. Dermal absorption is unlikely due to the physical-chemical properties of the substance.
Acute Toxicity (Inhalation LC50)	> 4.45 mg/l (dust/mist) Rat 4 hours
Test method(s): OECD 403.	
Skin Corrosion/Irritation:	
Erythema/eschar score	No erythema (0).
Oedema score	No oedema (0).
Test method(s): OECD 404.	Not irritating.
Serious eye damage/irritation:	Irritating.
Test method(s): OECD 405. Irritation score:	36 / 110
Respiratory or skin sensitisation:	
Skin sensitisation Patch Test: Mouse	Not Sensitising.

Germ cell mutagenicity:	
Genotoxicity - In Vitro	
Gene Mutation:	Negative.
(using Manganese chloride) Test method(s):	OECD 476. + 471.
Genotoxicity - In Vivo	
Chromosome aberration:	Negative.
(using Manganese chloride) Test method(s):	OECD 474.
Carcinogenicity:	Based on available data the classification criteria are not met.
NOAEL (♂)	615 mg/kg Oral Rat
NOAEL (♀)	715 mg/kg Oral Rat
Reproductive Toxicity:	
Reproductive Toxicity – Fertility	Suspected reproductive toxicant based on limited evidence. Testing waived because a more severe health effect was found (STOT-RE class2). Controlling the risk of 'STOT-RE class 2' will control the risks for this endpoint.
Reproductive Toxicity – Development	Suspected reproductive toxicant based on limited evidence. Testing waived because a more severe health effect was found (STOT-RE class2). Controlling the risk of 'STOT-RE class 2' will control the risks for this endpoint.
Specific target organ toxicity - single exposure:	
STOT - Single exposure	Scientifically unjustified.
Specific target organ toxicity - repeated exposure:	
STOT - Repeated exposure	Not determined.
Target Organs	Brain
MnSO4 is already classified under Directive 67/548/EEC as R48/20/22 and under GHS as STOT RE2. Data exists showing some neurochemical changes at low levels after inhalation exposure for 90-days, together with locomotor changes, around 3 mg/m3 concentration, suggesting that significant toxicity could occur at the 20-200 mg/m3 concentration level, which supports the current classification of STOT RE 2 for the inhalation route.	
Aspiration hazard:	Not applicable.
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system.
Ingestion	May cause discomfort if swallowed.
Skin contact	Powder may irritate skin.
Eye contact	Particles in the eyes may cause irritation and smarting.
Route of entry	Inhalation.
Target Organs	Brain Eyes Respiratory system, lungs Skin

**Copper oxychloride:**

**TOXICOLOGICAL INFORMATION**

Ingestion DL50	>500 mg/kg b.w. Rat
Inhalation CL50	1.95 mg/l Rat
Skin DL50	>2000 mg/kg b.w. Rat
Irritation: Skin:	Non oedema, non erythema(Rabbit)
Eye:	Non irritant (Rabbit)
Corrosivity:	No information available.
Sensitisation:	Non sensitizer (Guinea pig)
Repeated dose toxicity:	No information available.
Carcinogenicity:	Not applicable. Copper is widely present in all food, feedingstuffs and water.
Mutagenicity:	Not applicable. Copper is widely present in all food, feedingstuffs and water.
Toxicity for reproduction:	Not applicable. Copper is widely present in all food, feedingstuffs and water

**Zinc oxide:**

Toxic Dose 1 - LD 50	7950 mg/kg (oral-mouse)
Toxic Dose 2 - LD 50	> 15000 mg/kg (oral rat)
Toxic Conc. - LC 50	> 5.7 mg/l/4h (inh-rat)
Inhalation:	Dust in high concentrations may irritate the respiratory system.
Ingestion:	May cause discomfort if swallowed.
Skin Contact:	Powder may irritate skin. Mild dermatitis, allergic skin rash.
Eye Contact:	Particles in the eyes may cause irritation and smarting.
Medical Considerations:	Inhalation of dusts may irritate the respiratory tract. Zinc is present in drugs (medication) in small amounts up to 25 mg.

**12. ECOLOGICAL INFORMATION**

**12.1 Toxicity:** Mixture Classified as Toxic to aquatic life with long lasting effects in accordance with the Dangerous Preparations Directive 1999/45/EC

**Toxicological information on individual components where available:**

**Manganese sulphate:**

Acute Toxicity – Fish LC50 96 hours	14.5 mg/l Onchorhynchus mykiss (Rainbow trout)
Acute Toxicity - Aquatic Invertebrates (using Manganese chloride)	
EC50 48 hours	9.8 mg/l Daphnia magna
Acute Toxicity - Aquatic Plants EC50 72 hrs	61 mg/l Desmodesmus subspicatus (algae).

