



Material Safety Data Sheet for Mikropak™ (0-0-0)

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1. PRODUCT AND COMPANY IDENTIFICATION

Trade name: MIKROPAK™
 Chemical family: Sulphates (XXX)
 Chemical name: Blend, therefore not applicable
 Synonyms: Not applicable
 Chemical abstract no.: Not applicable
 NIOSH no.: Not applicable
 Hazchem code: Considered non-hazardous for transport in USA & South Africa
 UN no.: None

2. COMPOSITION

Components	%	CAS #	Chemical Family	SABS Class	SABS Danger Group	UN Number	EEC Class	EEC Risk & safety phrases used in the countries of the EU
Magnesium Sulphate	~ 20	10034-99-8	Magnesium compounds (012)	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Iron ETDA	~ 30	15708-41-5	Iron Compounds (026)	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Zinc Sulphate	~ 10	7446-20-0	Zinc compounds (030)	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Manganese Sulphate	< 10	10034-96-5	Manganese compounds (025)	Not Listed	Not Listed	Not Listed	Xn	Risk phrases 48/20/22 harmful: danger of serious damage to health by prolonged exposure through inhalation & if swallowed. Safety phrases (-)22. Keep out of reach of children. Do not breathe dust (for 7785-87-7)

3. HAZARDS IDENTIFICATION

Main Hazard:	Harmful if ingested or inhaled
Flammability:	Not flammable
Chemical Hazard:	Not noted
Biological Hazard:	Harmful if ingested or inhaled
Reproductive Hazard:	Not noted
Health Effects-eyes:	Irritating to eyes
Health Effects-skin:	Irritating to skin
Health Effects- <i>Ingestion:</i>	Harmful if swallowed. Effects include diarrhea, bloody diarrhea, vomiting, CNS depression, lack of reflexes, hypocalcemia, hypoglycemia, lethargy, shock, increased acidity in the blood, bluish skin discoloration, fever, liver damage and possibly death.
Health Effects- <i>Inhalation</i>	Hazardous if inhaled. Product is an irritant to the respiratory system and can cause metal fume fever.
Carcinogenicity:	This product contains suspected Carcinogens
Mutagenicity:	This product contains suspected Mutagens
Neurotoxicity:	Chronic exposure may impair the central nervous system

4. FIRST AID MEASURES

Product in the eye:	Immediately irrigate the eyes with eyewash solution or clean water for at least 15 minutes. Continue intermittent irrigation until medical attention can be obtained. Hold eyelids open during flushing.
Product on the skin:	Remove contaminated clothing and wash the affected skin with plenty of water. Obtain medical attention.
Product Ingested:	Induce vomiting as directed by medical personnel. Obtain medical attention.
Product Inhaled:	Move the injured person to fresh air at once. If not breathing give artificial respiration. If breathing difficult, give oxygen. Keep the patient warm and at rest. Obtain medical attention.

5. FIRE-FIGHTING MEASURES

Extinguishing Media:	Use any means suitable to extinguish surrounding fire.
Special hazards:	Release of toxic NOx, SOx, metal oxides and NH3 gasses.
Protective Clothing:	Wear self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Put on protective equipment before entering danger area. (see section 8)
Environmental Precautions:	Take care to avoid the contamination of watercourses and drains. Inform the appropriate authority in case of accidental contamination of watercourses.
Small Spills:	Any spillage of product should be cleaned up promptly and placed in a clean, labeled container for safe disposal.
Large Spills:	Action will depend on the degree and nature of contamination. Consult with a specialist.

7. HANDLING AND STORAGE

Suitable material: Plastic
 Handling: Avoid contact with eyes and skin, do not breathe dusts and keep out of reach of children.
 Storage Precautions: Store in a cool, well ventilated area, away from potential sources of heat and fire and incompatible materials.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Occupational exposure limits	OSHA PEL	ACGIH, TLV, TWA	TWA OEL-RL		Short term OEL-RL	
			ppm	mg/m3	ppm	mg/m3
Mn compounds as Mn	5mg/m3 (CL)	5 mg/m3	NIO	5	NIO	NIO
FeEDTA	NIO	NIO	NIO	NIO	NIO	NIO
Mg	NIO	NIO	NIO	NIO	NIO	NIO
Zn	NIO	NIO	NIO	NIO	NIO	NIO

Engineering control measures: Local exhaust ventilation. Provide safety showers and eye washing facility at any location where skin or eye contact can occur.
 Personal protection-respiratory: Use suitable gas mask or self contained breathing apparatus if exposure levels exceed the recommended limits.
 Personal protection-hand: Wear PVC gloves.
 Personal protection-eye: Use chemical safety goggles or full-face shield.
 Personal protection-skin: Wear boots, acid resistant apron and protective clothing.
 Other protection: As appropriate

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Blend of crystals and powders
 Odor: None
 pH (1% m/m solution): 4.4
 Boiling Point: Not determined
 Melting Point: Not determined
 Flash Point: Not determined
 Flammability: Not flammable
 Autoflammability: Not determined
 Explosive Properties: None
 Oxidizing Properties: Not an oxidizer
 Vapour Pressure: Not determined
 Density: 1.0 -1.2 g/ml (tapped 1.14 g/ml)
 Solubility-water: Soluble in water
 Solubility-solvent: Not compatible with solvents other than water
 Solubility-coefficient: Not known

10. STABILITY AND REACTIVITY

Conditions to avoid: High temperatures, high pressures, increasing the pH and incompatible materials.
 Incompatible Materials: Oxidizing agents, metals, alkalies, lead, calcium, strontium salts, borax, carbonates, hydroxides, silver proteins, tannins, ethoxy ethyl alcohols, arsenates, phosphates, tartrates, barium, powdered metals.

Hazardous

Decomposition

Products: NO_x, SO_x, and metal oxides

11. TOXICOLOGICAL INFORMATION

Compound	Cas Number	Acute (LD50)	Skin & eye contact	Chronic toxicity	Carcinogenicity	Mutagenicity	Neurotoxicity	Reproductive hazards or teratogenicity	Tumorigenic
Magnesium Sulphate	10034-99-8	> 3000 mg/kg oral, rat	Irritating to skin & eyes	NIO	Not IARC listed	Mutation data reported	NIO	Experimental teratogen	NIO
Iron EDTA	15708-41-5	5g/kg oral, rat	Irritating to skin & eyes	Cardiotoxicity	NTA in EDTA is carcinogenic	NIO	NIO	Birth defects in lab animals	NIO
Zinc Sulphate	7446-20-0	2150 mg/kg oral, rat	Irritating to skin & eyes	Anemia & skin eruptions	Questionable carcinogen	Human mutation data reported	NIO	Experimental, reproductive effects, experimental teratogenic effects	NIO
Manganese Sulphate	10034-96-5	NIO	Irritating to skin & eyes	Impairment of the CNS	Questionable carcinogen	Mutation data reported	NIO	Experimental, teratogen, experimental reproductive effects	Experimental tumorigenic data
									NIO

NIO=No information obtained

CNS=Central nervous system

NTA=Nitritotriacetic acid

12. ECOLOGICAL INFORMATION

Aquatic toxicity-fish: Not known

Aquatic toxicity-

Daphnia: Not known

Aquatic toxicity-

Algae: Not known

Biodegradability: All components will become part of natural mineral cycles.

Bio-accumulation: All components may accumulate in soils and water bodies and possibly in life forms.

Mobility: Components mobile and may leach into waterways.

German wgk: All components are German wgk class 1.

13. DISPOSAL CONSIDERATIONS

Disposal methods: Recycle to process if possible. Consult with expert.
Disposal of packaging: Dispose of container and unused contents in accordance with the federal, state and local requirements. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flames, sparks or other sources of ignition; they may involve poisonous gas and cause injury or death.

14. TRANSPORT INFORMATION

UN no: None
Substance identity no.: Not applicable
ADR/RID class: Not listed
ADR/RID item no.: Not listed
ADR/RID hazard
Identity no.: Not listed
IMDG-shipping name: Not listed
IMDG class: Not listed
IMDG-packaging
Group: Not listed
IMDG-marine
Pollutant: Not a marine pollutant
IMDG-EMS no.: Not listed
IMDG-MFAG table no.: Not listed
IATA-shipping name: Not listed
IATA-class: Not listed
IATA-subsidary risk(s): Not listed
ADNR-class: Not listed
UK-description: Not known
UK-emergency
Action class: Not known
UK-classification: Not known
Tremcard no.: Unknown

15. REGULATORY INFORMATION

EEC hazard
classification: Considered non-hazardous for transport
Risk phrase: None
Safety phrases: None
National legislation: Considered non-hazardous for transport in South Africa

16. OTHER INFORMATION

Disclaimer: Although reasonable care and diligence have been exercised with the compilation of this data sheet, and the information is given in good faith, it is for the User to satisfy himself of its suitability for a particular purpose. As a consequence neither HydroGro nor the compiler accept legal responsibility consequent to the use of this data sheet or its content-provided as a guideline-for any particular purpose.