MATERIAL SAFETY DATA SHEET

Zinc Sulfate Monohydrate

1. IDENTIFICATION

Product Name	Zinc sulfate monohydrate.
Chemical Name	Zinc sulfate.
Other Name/s	None allocated.
Manufacturers Name	Nutri-Tech Solutions Pty Ltd.
Telephone Number	+61 (0)7 5472 9900.
U.N. Number	None allocated.
Dangerous Goods Class	None allocated.
Secondary Risk	None allocated.
Hazchem Group	None allocated.
Pack Group	None allocated.
EPG	None allocated.
Poisons Schedule	S6.
Uses	Fertiliser and soil additive.
CAS number	7733-02-0

1.1 Emergency Contact Points

Police and Fire Brigade	000.
If ineffective	13 22 03 (Exchange).
For emergency response	1800 625 526.
National Poisons Information Centre	13 11 26 (from anywhere in Australia).

1.2 Physical Description/Properties

Appearance	White free-flowing granular powder.
Odour	No odour.
pH	No data available.
Flammability	Non flammable.
Solubility in Water	50-65% soluble in water at 20^{0}C.
Lower Explosion Limit	Not applicable.
Upper Explosion Limit	Not applicable.
Bulk Density	No data available.
Specific Gravity	3.35
Melting Point	100^{0}C.
Boiling Point	>500^{0}C decomposes.
Vapour Pressure	Negligible.
Evaporation Rate	No data available.
Reactivity Data	No data available.

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1.2 Other Properties . . . . . None.

1.3 Ingredients . . . . . Zinc sulfate monohydrate CAS No. 7733-02-0 >96%.

2 HEALTH HAZARD INFORMATION

2.1 Health Effects

I Ingestion. . . . . The material is highly discomforting to the gastro-intestinal tract and may be harmful if swallowed in large quantities. Ingestion may cause nausea and vomiting, stomach cramps and stricture of the esophagus. Swallowing large amounts can cause violent vomiting and purging, shock and convulsions. Complications include liver damage, jaundice, hypertension, renal failure with following coma and death. Soluble zinc salts produces irritation and corrosion of the alimentary (in a manner similar to copper salts) with pain, vomiting etc. Delayed deaths have been ascribed to inanition Weakness and extreme weight loss resulting from prolonged and severe food insufficiency) following severe strictures of the esophagus and pylorus. Sulfate salts are poorly absorbed from the gastro-intestinal tract but because of osmotic activity are able to draw water from the lumen to produce diarrhoea (purging). Sulfate ion usually has little toxicological potential.

Eye Contact . . . . . The dust may be discomforting to the eyes and is capable of causing pain and severe conjunctivitis. Corneal injury may develop with possible permanent impairment of vision, if not promptly and adequately treated. The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritant may produce conjunctivitis.

Skin Contact. . . . . The material is highly discomforting and mildly corrosive to the skin and may cause ulceration if exposure is prolonged. Solution of the material in moisture on the skin, or perspiration, may increase irritant effects. Open cuts, abraded or irritated skin should not be exposed to this material. The material may accentuate an pre-existing skin condition.

Inhalation . . . . . Dust may cause some respiratory irritation.

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Chronic Health Effects . . . . . Primary route of exposure is usually by skin contact and inhalation of generated dust. No human exposure data available. For this reason health effects described are based on experience with chemically related materials. As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form , should be avoided by observing good occupational work practice.

2.2 First Aid and Emergency Procedures

Ingestion. . . . . If poisoning occurs, contact a doctor or Poisons Information Centre as per Emergency contact points on page 1.
If swallowed do not induce vomiting, Give a glass of water.

Eye Contact . . . . . Immediately hold the eyes open and wash with plenty of water for at least 15 minutes. Ensure complete irrigation of the eye by keeping eyelids apart and occasionally lifting upper and lower eyelids away from the eye.

Skin Contact. . . . . Immediately remove all contaminated clothing, including footwear (after rinsing with water). Wash affected area thoroughly with soapy water. Seek medial attention in event of irritation.

Inhalation . . . . . Remove to fresh air. Encourage patient to blow nose to ensure clear breathing passages. Rinse mouth with water, consider drinking water to remove dust from throat. Remove to fresh air. Consult a physician.

2.3 First Aid Facilities . . . . . No special requirements.

2.4 Advice to Doctor . . . . . Absorption of zinc compounds occurs in the small intestine.
The metal is heavily protein bound.
Elimination results primarily from faecal excretion.
The usual measures for decontamination (Ipecac syrup, lavage, charcoal or cathartics) may be administered, although patients usually sufficient vomiting not to require them.
CaNa2EDTA has been used successfully to normalise zinc levels and is the agent of choice (Ellenhorn and Barceloux: Medical Toxicology).

2.5 Toxicity Data . . . . . No data available.

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3 PRECAUTIONS FOR USE

3.1 Conditions to Avoid . . . . . Keep dry, Avoid contamination of water, foodstuffs, feed or seed.

3.2 Personal Protection . . . . . Provide adequate ventilation.

Eye	,Safety glasses with side shields; or as required chemical goggles. Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.
Hands and feet	Wear general protective gloves: ie disposable polythene gloves or cotton gloves or light weight rubber gloves with barrier cream. Approved safety footwear.
Other	Overalls.
Respiratory	Always wear a NIOSH approved respirator.

3.3 Special Fire Fighting Procedures . . . . . Material is non combustible.

3.4 Flammability . . . . . Not applicable.

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4 SAFE HANDLING INFORMATION

4.1 Storage/Transport . . . . . Non-dangerous goods.

4.2 Packaging/Labelling

UN No . . . . . No applicable
Pack Group . . . . . Not applicable
Class . . . . . Not applicable
Hazchem Code . . . . . Not applicable.
Subs Risk . . . . . Not applicable.
EPG No . . . . . Not applicable.
Shipping Name . . . . . Zinc sulfate monohydrate.
Hazard . . . . . None.

4.3 Spills and Disposal

Minor Spills . . . . . Clean up all spills immediately.
Avoid contact with skin and eyes.
Wear protective clothing, gloves, safety glasses and dust respirator.
Use dry clean up procedure and avoid generating dust.
Vacuum or sweep up.
Place in clean drum then flush area with water.

Major spills . . . . . Clear area of personnel and move upwind.
Alert Fire Brigade and tell them location and nature of hazard. Control personal contact by using protective equipment.
Prevent, by any means available, spillage from entering drains or water courses. Increase ventilation. Stop leak if safe to do so. Use dry clean up procedure and avoid generating dust.
Recover uncontaminated product in clean, dry, labelled containers. Collect residues and seal in labelled drums for disposal. Wash area down with large quantities of water and prevent runoff into drains. After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

If contamination of drains or waterways occurs , advise emergency services.

Disposal . . . . . Dispose of in accordance with all local, State and Federal regulations.

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4.4Fire/Explosion Hazard

Fire/Explosion . . . . . Non combustible. Not considered to be a significant fire risk, however containers may burn. In a fire may decompose on heating and produce toxic/corrosive fumes.
Decomposes on heating an produces acrid and toxic fumes of zinc oxide and sulfur dioxide (So_2).

Extinguishing Media . . . . . Use appropriate media for surrounding fire conditions.

5 OTHER INFORMATION . . . . . No data available.