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Version 1.1

Issue date 22/09/2024

SECTION 1 – IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY

Product Identifier

Product Name	Zinc Sulphate Heptahydrate
Other Names	Zinc Sulphate ($ZnSO_4$) Heptahydrate
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S
Other means of Identification	None

Relevant identified uses of the substance or mixture

Relevant identified uses	Dietary supplement, animal feeds

Details of the supplier of the safety data sheet

Registered company name	Vetpak Limited
Address	249 Bruce Berquist Dr, Te Awamutu 3800.
Telephone	(07) 870 2024
Website	www.vetpak.co.nz
Email	sales@vetpak.co.nz

Emergency telephone numbers

Association/ Organisation	New Zealand National Poison information centre
Emergency telephone number	0800 764 766 (07) 870 2024 Vetpak. 8.00am to 5.00pm Monday to Friday except public holidays.
Other emergency telephone numbers	New Zealand emergency services 111

SECTION 2 – HAZARDS IDENTIFICATION

Hazard Classification:

Hazardous according to the criteria of the Globally Harmonised System of classification and labelling of chemicals (GHS)

Label pictograms

GHS label elements	
Signal Word	DANGER

Hazard statements

HSNO	Hazard Code	GHS Category	Hazard Statement
6.1D	H 302	Category 4	Harmful if swallowed, in contact with skin
6.9B	H 373	Category 2	May cause damage to organs
8.3A	H 318	Category 1	Causes serious eye damage

9.1A	H 410 / H410	Category 1	Very toxic to aquatic life
9.3C	H 433	None	Harmful to terrestrial vertebrates

Precautionary statements prevention

P102	Keep out of reach of children
P103	Read label before use
P260	Do not breathe dust/fume/gas/mist/vapours/spray
P264	Wash hands and exposed skin thoroughly after handling
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection

Precautionary statement responses

P101	If medical advice is needed, have product container or label at hand.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
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 or doctor/physician.
P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth
P391	Collect spillage

Precautionary statement disposal

P501	Disposal should be through a suitably qualified contractor following the EPA guidelines

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Mixtures

CAS Number	% (weight)	Name
7446 – 20 – 0	100 %	Zinc Sulphate Heptahydrate

SECTION 4 – FIRST AID MEASURES

Description of first aid measures

Eye contact	➢ Wash out immediately with fresh running water for several minutes. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ➢ Seek medical attention immediately for assessment of the eye. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel
Skin contact	➢ Remove contaminated clothing including footwear. ➢ Flush skin and hair with running water (and soap if available). ➢ Seek medical attention in event of irritation.
Inhalation	➢ If dust is inhaled, remove from contaminated area. Encourage patient to blow nose to ensure clear passage of breathing. ➢ If irritation or discomfort persists, seek medical attention.
Ingestion	➢ If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head down position, if possible) to maintain open airway and prevent aspiration. ➢ Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ➢ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.

	➢ Seek medical advice.
Advice to the doctor	The symptoms of metal fume fever do not become manifest until a few hours have passed. Treat symptomatically. No action shall be taken involving any personal risk or without suitable training. Ensure that attending medical personnel are aware of the identity and nature of the product(s) involved, and take precautions to protect themselves

SECTION 5 – FIREFIGHTING MEASURES

Extinguishing media	➢ In case of fire, use appropriate extinguishing media most suitable for surrounding fire conditions: ➢ water - water spray ➢ dry powder ➢ foam ➢ carbon dioxide (CO2).

Special hazards arising from the substrate or mixture

Fire incompatibility	Non-combustible solid

Advice for fire fighters

Fire fighting	➢ Alert Fire Brigade and tell them location and nature of hazard. Clear fire area of all non-emergency personnel. ➢ Stay upwind. Eliminate ignition sources. ➢ Wear breathing apparatus plus protective gloves. ➢ Prevent spillage from entering drains or water courses. Use firefighting procedures suitable for surrounding area. ➢ DO NOT approach containers suspected to be hot. ➢ Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. ➢ Equipment should be thoroughly decontaminated after use.
Fire/explosion hazard	➢ Non-combustible; Material does not burn
Hazardous Products of Combustion	➢ Combustion products include zinc oxides. Irritating and toxic gases will be emitted in the event of a fire
Special Fire Fighting Instructions	➢ Contain runoff from fire control or dilution water - Runoff may pollute waterways.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor spills	➢ Environmental hazard - contain spillage. ➢ Clean up all spills immediately. Avoid contact with skin and eyes. Control personal contact by using protective equipment. ➢ Use dry clean up procedures and avoid generating dust. ➢ Place in a suitable labeled container for waste disposal.
Major spills	➢ Environmental hazard - contain spillage. Moderate hazard. ➢ Alert Emergency Services and tell them location and nature of hazard. ➢ Control personal contact by wearing protective clothing including chemical safety goggles. ➢ Prevent, by any means available, spillage from entering drains or water courses. Recover product wherever possible. ➢ Use dry clean up procedures and avoid generating dust. ➢ Collect residues and place in sealed plastic bags or other containers for disposal. ➢ If contamination of drains or waterways occurs, advise Emergency Services.

Clean Up Procedures	➢ Move containers from spill area. ➢ Collect material (sweep or vacuum up) and place it into a suitable, properly labeled container for disposal if appropriate, moisten first or cover with damp absorbent to avoid generating dust
Containment	➢ Store away from food product and animal feedstuffs
Environmental Precautionary Measures	➢ Store in original packaging. Keep containers tightly sealed to prevent contamination. ➢ Store in a cool, dry, well-ventilated area, out of direct sunlight. Store away from incompatible materials and foodstuffs

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling

Safe Handling	➢ Read label before use ➢ Limit all unnecessary personal contact. ➢ Wear protective clothing when risk of exposure occurs. ➢ Use in a well-ventilated area. ➢ When handling DO NOT eat, drink or smoke. ➢ Always wash hands with soap and water after handling. ➢ Avoid physical damage to containers. Use good occupational work practice. ➢ Observe manufacturer's storage and handling recommendations contained within this SDS.
Storage	➢ Store in a cool, dry and well-ventilated place, out of direct sunlight. ➢ Keep containers closed when not in use - check regularly for spills. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. ➢ Keep away from foodstuffs and incompatible materials. ➢ Use appropriate containment to avoid environmental contamination.

Conditions for safe storage, including any incompatibilities

Suitable container	➢ Keep in the original container or an approved alternative made from a compatible material. ➢ Do not store in unlabelled containers. ➢ Empty containers retain product residue and can be hazardous.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No exposure standard has been established for this product by WorkSafe New Zealand New Zealand Workplace Exposure Standard for Zinc oxide [Adopted 2020]: New Zealand WES 2020 total dust time weighted average (TWA) 10 mg/m³ New Zealand WES 2020 respirable dust time weighted average (TWA) 3 mg/m³

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal protection	

Eye and face protection	➢ Safety glasses with side shields ➢ Contact lenses may pose a special hazard soft contact lenses may absorb and concentrate materials. ➢ Medical personal should be trained and readily available in the event of chemical exposure; they should begin eye irrigation and remove contact lenses as soon as practicable. Lenses should be removed at the first sign of eye irritation
Skin protection	Wear general protective gloves e.g. light weight rubber gloves
Hand / feet protection	As above for hands; wear appropriate footwear for the environment
Body protection	Overalls or PVC Aprons if available
Other protection	➢ Overalls ➢ PVC Aprons ➢ PVC protective gear ➢ Eyewash facilities ➢ Ensure there is ready access to a safety shower
Work Hygienic Practices	➢ Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. ➢ Workers should wash hands and face before eating, drinking and smoking. ➢ Remove contaminated clothing and protective equipment before entering eating areas. ➢ Appropriate techniques should be used to remove potentially contaminated clothing. ➢ Wash contaminated clothing before reusing.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Solid	Density	5.6 g/cm3
Odour	Odourless	Specific gravity	5.61(H_2O = 1)
Odour threshold	Not available	Bulk density	1.98
pH	4.0 – 4.6 (5% solution)	Viscosity	Not available
Melting point (^oC)	100 °C	Decomposition Temperature	Not available
Boiling point (^oC)	Not available	Solubility in water (g/L @ 20°C)	965
Flash point (^oC)	Not available	Explosive properties	Not available
Vapour pressure	Not available	Oxidising properties	Not available
Flammability	Not flammable	Volatile component (% vol)	Negligible

SECTION 10 – STABILITY AND REACTIVITY

General Information	Product is stable under normal conditions of use, storage and temperature
Chemical stability	Product is stable under normal conditions of use, storage and temperature
Conditions to avoid	Avoid excessive heat, direct sunlight, static discharges, moisture, and temperature extremes
Incompatible materials	Incompatible with strong oxidizing agents
Hazardous Polymerisation	Thermal decomposition can lead to release of Zinc oxides and Sulphur oxides

SECTION 11 – TOXICOLOGICAL INFORMATION

General	Acute Oral Toxicity, Rat, LD50: 1000-2000 mg/kg Acute Dermal Toxicity, Rabbit, LD50: >2000 mg/kg (Zinc Sulphate) Acute Inhalation Toxicity, LC50: No data available.
Inhalation	The dust may be irritating to the upper respiratory tract. Symptoms include coughing, pain, and shortness of breath. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.
Ingestion	The material is highly discomforting to the gastro-intestinal tract and may be harmful if swallowed. This material may cause damage to kidneys and liver through prolonged or repeated exposure.
Skin	May cause transient irritation. A 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 any pre-existing skin condition
Eyes	This material is corrosive to eyes and may cause permanent damage. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated. Repeated or prolonged exposure to irritants may produce conjunctivitis.
Carcinogenicity	Not listed as carcinogenic
Reproductive Toxicity	Not applicable
Mutagenicity	Not suspected of causing genetic defects.
Chronic effects	Repeated inhalation exposure can lead to metal fume fever, including impairment of the respiratory tract. Chronic exposure to zinc by ingestion can lead to damage of the kidneys and liver. Long term exposure can affect the stomach and intestine, the respiratory system, and the pancreas. It can cause issues with the uptake of the trace element Copper in the diet
Specific organ toxicity	Harmful to the blood and hematopoietic system.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity	Very toxic in the aquatic environment with long lasting effects and harmful to terrestrial vertebrates – Fish, (Cottus bairdii), 96h LC50: 439µg Zn/L Crustacean, (Daphnia magna), 48h EC50: 1220 µg Zn/L Algae, EC50: No data available
Persistence/Degradability	No information available
Bioaccumulation Potential	No information available
Environmental Impact	Causes long term adverse effects in the aquatic environment

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / packaging disposal	➢ Dispose of product only by using according to label or at an approved landfill. Recycle where possible. ➢ Do not contaminate bodies of water with chemical or empty container. Refer to the Local council bylaws and Land Waste Management Authority. ➢ Dissolved material in excess water is normally suitable for disposal in storm water system.

SECTION 14 – TRANSPORT INFORMATION

Labels required

Marine Pollutant	
HAZCHEM	2Z Hazardous

Land transport (ADG)

UN Number	3077
Packing group	III
UN proper shipping name	Zinc Sulphate Heptahydrate
Environmental hazard	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)
Transport hazard classes	9 Miscellaneous Dangerous Goods and Articles
Special precautions for user	No data available

Air transport (ICAO-IATA / DGR)

UN Number	3077
Packing group	III
UN proper shipping name	Zinc Sulphate Heptahydrate
Environmental hazard	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)
Transport hazard classes	9 Miscellaneous Dangerous Goods and Articles
Special precautions for user	No data available

Sea transport (IMDG / GGVSee)

UN Number	3077
Packing group	III
UN proper shipping name	Zinc Sulphate Heptahydrate
Environmental hazard	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)
Transport hazard classes	9 Miscellaneous Dangerous Goods and Articles
Special precautions for user	No data available
Marine Pollutant	Yes

SECTION 15 – REGULATORY INFORMATION

Safety, health and environment regulations / legislation specific for the substance or mixture

GHS Codes	6.1D, 6.9B, 8.3A, 9.1A, 9.3C
National Inventory	Status - Approved
Australia – AICS	Yes
Europe – EINEC / ELINCS / NLP	Yes
New Zealand – NZIoC	Yes - All ingredients are on the inventory
Environmental Protection Authority (New Zealand)	Hazardous Substances and New Organisms Amendment Act 2015
Approval Code	HSR002503 - Additives Process Chemicals and Raw Materials Subsidiary Hazard Group Standard 2020

SECTION 16 – OTHER INFORMATION

While Vetpak Limited in good faith has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, Vetpak Limited accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

New Zealand National Poison Information Centre:	0800 764 766
New Zealand Emergency Services:	111
Vetpak Limited:	+64 7 870 2024

Definitions and abbreviations

PC – TWA	Permissible concentration – time weighted average
PC – STEL	Permissible concentration – short term exposure limit
IARC	International agency for research on cancer
ACGIH	American conference of Government Industrial Hygiene
STEL	Short term exposure limit
TEEL	Temporary emergency exposure limit
IDLH	Immediate dangerous to life or health concentration
OSF	Odour safety factor
NOAEL	No observed adverse effect level
LOAEL	Lowest observed adverse effect level
TLV	Threshold limit value
LOD	Limit of detection
OTV	Odour threshold value
BCF	BioConcentration factors

END OF SDS