SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **ZINC SULFATE MONOHYDRATE**

Synonyms 62160 - PRODUCT CODE ● ZINC SULPHATE MONOHYDRATE

1.2 Uses and uses advised against

Uses GRANULAR ZINC FERTILISER ● GRANULAR ZINC FERTILIZER

1.3 Details of the supplier of the product

Supplier name **INCITEC PIVOT**

Address Level 9, South Tower Rialto, 525 Collins Street, Melbourne, Victoria, 3000, AUSTRALIA

Telephone (03) 8695 4400; 1800 009 832

Fax (03) 8695 4419

Email Ipf.customer.service@incitecpivot.com.au

Website http://www.incitecpivotfertilisers.com.au

1.4 Emergency telephone numbers

Emergency 1800 033 111

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Acute Toxicity: Oral: Category 4
Serious Eye Damage / Eye Irritation: Category 1

Environmental Hazards

Aquatic Toxicity (Chronic): Category 1

2.2 GHS Label elements

Signal word **DANGER**

Pictograms

Hazard statements

H302 Harmful if swallowed.
H318 Causes serious eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Prevention statements

P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response statements

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 CENTRE or doctor/physician.
P330	Rinse mouth.
P391	Collect spillage.

Storage statements

None allocated.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ZINC SULPHATE MONOHYDRATE	7446-19-7	616-096-8	100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire. If water used in fire fighting cannot all be contained on site, block drains with sandbags, waterproof tarpaulins or earth to prevent run-off from site. Zinc sulfate is potentially toxic to marine and freshwater organisms. Dispose of contaminated water in accordance with regulatory requirements.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (zinc/ sulphur oxides) when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

2Z

2	Fine Water Spray.
Z	Wear full fire kit and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Recover spilt fertiliser as soon as possible, and place in suitable containers.

If in the open, and the product cannot be immediately recovered, take steps to protect the product from the elements and loss to waterways. Cover the spilt product with a water-proof tarpaulin, weighed down to prevent it being blown off by wind.

This product is classified as an Environmentally Hazardous Substance. It is potentially toxic to marine or freshwater organisms in aquatic environments.

For disposal options, see Section 13.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use, read the product label, including sections on "Safety Directions" and "Care of Equipment". Use safe work practices. Avoid eye or skin contact and dust inhalation. Observe good personal hygiene, including washing hands before eating. When lifting Flexible Intermediate Bulk Containers, use properly designed and approved equipment that meets Australian Standards AS3668 and AS2359. Refer to the Incitec Pivot pamphlet "Guidance for the Safe Handling of Fertiliser Bulk Bags".

7.2 Conditions for safe storage, including any incompatibilities
Fertilisers should be stored in a cool, dry, covered and well-ventilated area. Do not allow to get wet. Ensure the store is above known flood heights and protected against flooding, and away from water courses and open stormwater channels. Packaged fertiliser should be stored in such a manner that in the event of a spill it cannot escape from the compound. Store away from farm chemicals, e.g. insecticides, fungicides and herbicides; and foodstuffs. Ensure stockpiles of bulk bags are stable. Place the bags as close as reasonably practical to each other without causing undue damage. If stacking more than two high, stack in a pyramidal style. Ensure the third and subsequent layers are placed so as to straddle and bind the bags below them. When walking near, or between rows of stacked bags, maintain a distance equal to the height of the stack from the product. Bagged fertilisers should be stored under cover and out of direct sunlight (which degrades woven polypropylene packs). If stored in the open, do so for short periods only, and cover the bags with a tarpaulin. Avoid high stacking as this promotes caking. The Pallet Capacity Rating (design weight) must not be exceeded on the bottom tier.

7.3 Specific end uses
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

No exposure standards have been entered for this product.

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls Avoid inhalation. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

The selection of Personal Protective Equipment (PPE) should be based on a Risk Assessment of the level of exposure, including the amount of product being handled, the task being performed and the work environment in which it is being conducted. Normal work clothing may suffice in the field, e.g. when handling bags and filling fertiliser boxes, and where contact with the product is limited under well ventilated conditions and occupational exposure limits are not exceeded.

Eye / Face	Where eye contact may occur, wear safety glasses with side shields.
Hands	Cotton gloves, which can be washed or disposed of if heavily soiled, will suffice under most circumstances. Use impervious PVC or rubber gloves in high risk situations.
Body	Where skin contact may occur and for individuals with sensitive skin, wear ankle length and long sleeved clothing or overalls.
Respiratory	Wear a dust mask where exposure to dust is light. Where the dust nuisance is high and ventilation is inadequate, use a properly fitted particulate filter respirator, either full face-piece or half mask plus goggles, that meets Australian Standards AS/NZS 1715 and AS/NZS 1716 "Selection, use and maintenance of respiratory protective devices".

Wash dust from hands and exposed skin. In risk situations, locate an eyewash station nearby. Wash contaminated clothing and other protective equipment before storage or reuse. Ensure all PPE conforms to the relevant Australian Standards. Read the labels on the PPE.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	OFF-WHITE GRANULES
Odour	MILD ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	280°C
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	3.3
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

Bulk density	1700 to 1800 kg/m³

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid
Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials
No information provided.

10.6 Hazardous decomposition products
May evolve toxic gases (zinc/ sulphur oxides) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity Harmful if swallowed.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
ZINC SULPHATE MONOHYDRATE	1891 mg/kg (mouse-anhydrous)	--	--

Skin Contact may result in irritation, redness, pain and rash.

Eye Causes serious eye damage. Contact may result in irritation, lacrimation, pain, redness, blurring or dimness of vision and possible damage.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Over exposure may result in irritation of the nose and throat, coughing, dizziness, drowsiness and headache.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Zinc Sulphate is classified as very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

12.2 Persistence and degradability
The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential
All living organisms have homeostasis mechanisms that actively regulate zinc uptake and absorption/excretion from the body. However, bioaccumulation and biomagnification can still occur under certain conditions.

12.4 Mobility in soil
No information provided.

12.5 Other adverse effects
Avoid contamination of drains and waterways. Limited ecotoxicity data was available for this product at the time this report was prepared. Ensure appropriate measures are taken to prevent this product from entering the environment. Zinc sulfate is classified as an Environmentally Hazardous Substance. It is potentially toxic to marine or freshwater organisms in aquatic environments. Avoid contamination of waterways.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Ideally, the fertiliser should be used for its intended purpose. Beneficial reuse is the preferred disposal option. For fertiliser that is physically degraded but not contaminated in any way, this may necessitate using different application equipment and methods to apply it. If the fertiliser is contaminated with other fertilisers, soil, or other non-harmful substances, and it can be satisfactorily applied, use it for its nutrient value in pasture, crops or on a recreational area, e.g. lawns and parks. If contaminated with other materials, e.g. fuel, oil or chemicals, the fertiliser waste must be disposed of in accordance with relevant local legislation. Contact the Waste Management Authority for advice.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	3077	3077	3077
14.2 Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains zinc sulphate monohydrate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains zinc sulphate monohydrate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains zinc sulphate monohydrate)
14.3 Transport hazard class	9	9	9
14.4 Packing Group	III	III	III

14.5 Environmental hazards

Marine Pollutant.

14.6 Special precautions for user

Hazchem code 2Z

GTEPG 9C1

EmS F-A, S-F

Other information The environmentally hazardous substance mark is not required when transported in packages of less than 5 kg/L (UN Model Regulations: Special Provision 375; IATA: Special Provision A197; IMDG: Special Provision 969) or less than 500 kg/L by Australian Road and Rail.

15. REGULATORY INFORMATION

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

Poison schedule Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonized System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT 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, RMT 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.

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