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Material Safety Data Sheet
ZINC SULPHATE MONOHYDRATE

Section 1 - Chemical Product and Company Identification

MSDS Name : ZINC SULPHATE MONOHYDRATE
Chemical Name : Zinc Sulfate Monohydrate / Zinc Sulphate Monohydrate
Synonyms : Zinc Sulfate Monohydrate, Zinc Sulphate Monohydrate, Zinc Sulfate 1-Hydrate, Zinc Sulfate Hydrate (Monohydrate), Zinc Sulphate Hydrate (Monohydrate), Zinc Monosulfate Monohydrate, Monohydrated Zinc Sulfate, Zinc Vitriol Monohydrate, White Vitriol Monohydrate, Sulfuric Acid, Zinc Salt, Monohydrate, Zinc(II) Sulfate Monohydrate, Zinc Sulphate Fertilizer Grade, Zinc Sulphate Feed Grade, Zinc Sulphate Technical Grade, Zinc Sulphate Industrial Grade, Dried zinc sulphate, Sulfuric acid zinc salt monohydrate
Chemical Formula : $ZnSO_4 \cdot H_2O$
Molecular Weight : 179.47 g/mol
CAS No : 7446-19-7
UN No : UN 3077
Hazchem Code : 2Z
ERG No : 171
EAC : 2Z

Company Identification : The BTTCO Overseas
6, Ashirvad Complex, Nr. Sardar Patel Seva Samaj Hall,
Navrangpura, Ahmedabad – 380009

Telephone Number : +91-94265 96891
Contact Person : Mr. Dinesh Lunkad

Section 2 Composition, Information on Ingredients

Chemical Name/ Ingredient	CAS #	Percent
Zinc sulphate monohydrate	7446-19-7	99%

Section 3 Hazards Identification

This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2020.

EPA Approval No : Additives, Process Chemicals and Raw Materials (subsidiary) - HSR002503

Pictograms:				

Signal Word : Danger

HSNO Classification	**Hazard Code**	**Hazard Statement**
Acute oral toxicity Cat. 4	H302	Harmful if swallowed.
Serious eye damage Cat. 1	H318	Causes serious eye damage.
Specific target organ toxicity – repeated exposure Cat. 2	H373	May cause damage to organs through prolonged or repeated exposure.
Hazardous to the aquatic environment Acute/chronic Cat. 1	H400/H410	Very toxic to aquatic life with long lasting effects.

Prevention Code	**Prevention Statement**
P102	Keep out of reach of children.
P103	Read label before use.
P260	Do not breathe dust.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective clothing as detailed in Section 8.

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P310	Immediately call a POISON CENTER or doctor/physician.
P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth.
P391	Collect spillage.
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.

Storage Code	Storage Statement
None allocated	

Disposal Code	Disposal Statement
P501	Dispose of according to Local Regulations or Authorities

Section 4 First Aid Measures

Eye Contact : Flush with plenty of water for several minutes, holding eyelids open if necessary. Remove contact lenses if present and easy to do. Immediately call a POISON CENTER or doctor/physician.

Skin Contact : Wash affected area thoroughly with soap and water. If skin irritation occurs: Get medical advice/attention.

Inhalation : Remove patient to fresh air. Lay down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical assistance If needed.

Ingestion : Rinse mouth. Never give anything by mouth to an unconscious person. If swallowed DO NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed Symptoms:

Eyes : Causes severe eye damage.

Skin : Not applicable.

Ingested : Harmful if swallowed. Ingestion of large quantities may lead to nausea, vomiting, inflammation of mucous membranes, stomach ulceration, cold sweats, pulse depression and leg cramps.

Inhaled : May lead to nausea, vomiting, inflammation of mucous membranes.

Chronic : May cause damage to organs through prolonged or repeated exposure.

Section 5 Fire Fighting Measures

Hazard Type : Non-Flammable

Hazards from combustion Products : Sulphur oxides, zinc oxide.

Fire Extinguishing Media : Use extinguishing media suitable for surrounding area.

Precautions for firefighters and special protective clothing : Breathing apparatus and protective gloves. Use water spray to cool intact containers.

HAZCHEM CODE : 2Z

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures : Wear appropriate protective clothing as detailed in Section 8. Exclude non-essential people from the area.

Environmental Precautions : Avoid from entering drains, waterways or sewers.

Methods and material for containment and cleaning up : Contain spill and sweep up. Collect and place in sealable containers. Avoid generating dust. Dispose of according to Section 13.

Section 7 - Handling and Storage

Handling : Read label before use. Do not breathe dust. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective clothing as detailed in Section 8.

Storage : Store away from incompatible materials listed in Section 10. Keep out of the reach of children. Keep container tightly closed. Store in sealed packaging in cool, dry, well-ventilated area.

Section 8 - Exposure Controls, Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

	TWA	STEL
Substance	**ppm mg/m3**	**ppm mg/m3**

No exposure limits have been assigned for this product.

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices NOV 2019 11TH EDITION.

Engineering Controls : If dusts are generated use local extraction to control.

Personal protective Equipment

Eye protection : Safety glasses. If dusts present wear goggles. Ensure eye wash facilities should be available.

Skin protection : When contact with product is likely, wear protective gloves and overalls.

Respiratory protection : If dusts present wear dust mask.

General : Do not eat, drink or smoke while using this product. Remove protective clothing and wash daily after work. Contaminated clothing should not be allowed out of the workplace.

Section 9 - Physical and Chemical Properties

Appearance	: Powder or granules
Colour	: White
Odor	: Odourless
Odour Threshold	: Not available
pH	: (50g.L-1 in water, 20ºC) 4-5.2
Boiling Point	: Not available
Melting Point	: 240ºC (loses crystalline water).
Freezing Point	: Not available
Flash Point	: Not available
Flammability	: Not available
Upper and Lower Explosive Limits	: Not available
Vapour Pressure	: Not available
Vapour Density	: Not available
Specific Gravity	: 3.35 g/cm3
Bulk Density	: 1260 g.cm-3
Water Solubility	: 350g/L (at 20ºC).
Partition Coefficient	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: >600ºC
Kinematic Viscosity	: Not available
Particle Characteristics	: Not available

Section 10 - Stability and Reactivity

Stability : Stable under normal conditions.

Possibility of hazardous Reactions : Not available

Conditions to avoid : Strong heat, moisture.

Incompatibility with various substances : Strong oxidizing agents, water, lead, calcium, strontium salts, borax, alkali carbonates and hydroxides, silver proteins and tannins.

Hazardous decomposition Products : Sulphur oxides, zinc oxide.

Hygroscopic : Yes

Section 11 - Toxicological Information

Acute Effects:

Swallowed : Harmful if swallowed. Ingestion of large quantities may lead to nausea, vomiting, inflammation of mucous membranes, stomach ulceration, cold sweats, pulse depression and leg cramps. LD50 (oral, rat)2949 mg.kg-1

Dermal : Not applicable.

Inhalation : Not triggered however if inhaled may lead to nausea, vomiting, inflammation of mucous membranes.

Eye : Causes severe eye damage.

Skin : Not applicable.

Chronic Effects:

Carcinogenicity : Not applicable.
Reproductive Toxicity : Not applicable.
Germ Cell Mutagenicity : Not applicable.
Aspiration : Not applicable.
STOT/SE : Not applicable.
STOT/RE : May cause damage to organs through prolonged or repeated Exposure

Section 12 - Ecological Information

Very toxic to aquatic life with long lasting effects.

Persistence and degradability : No data available.
Bioaccumulation : No data available.
Mobility in Soil : No data available.
Other adverse effects : No data available.

Do not allow to enter waterways

Section 13 - Disposal Considerations

Waste 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.

Container Disposal : Rinse containers thoroughly prior to re-use. Otherwise render unusable, and dispose of as hazardous waste.

Precautions or methods to avoid : Do not allow to enter waterways.

Section 14 - Transport Information

DOT/IATA/IMDG/IMO

Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Sulphate Monohydrate)
UN No : UN 3077
CAS No : 7446-19-7
EMS No : F-A, S-F
ERG No : 171
EAC : 2Z
IMDG-Packaging Group : Packing Group III
Marine Pollutant : Yes (Classified as a Marine Pollutant / Environmentally Hazardous)
Class : Class 9 (Miscellaneous Dangerous Substances and Articles)
Packing Group : Packing Group III
Subsidiary Risks : None
Label Required : Class 9 Hazard Label AND Marine Pollutant Mark

	
Class 9 (Miscellaneous dangerous substances and articles)	**GHS09 Hazardous to the Environment**

Special Provisions : If the product's individual container is below 5kg, it can be transported as a non-DG as long as the product packaging is still labelled as per DG requirements and the driver is given safety information in accordance with Chapter 3.4 of the UNRTDG.

Section 15 -Regulatory Information

This substance is classified hazardous according to the EPA Hazardous Substances (Classification) Notice 2020

EPA Approval Code : Additives, Process Chemicals and Raw Materials (subsidiary) – HSR002503.

GHS Classification : Acute oral toxicity Cat. 4
Serious eye damage Cat. 1
Specific target organ toxicity – repeated exposure Cat. 2
Hazardous to the aquatic environment Acute/chronic Cat. 1

HSW (HS) Regulations 2017	Trigger Quantity
Signage Trigger Quantities (Schedule 3)	100kg
Emergency Response Plan (Schedule 5)	100kg
Secondary Containment (Schedule 5)	100kg
Tracking (Schedule 26)	Not required
Certified Handlers	Not required
Restrictions of use	None known.

Section 16 - Other Information

Glossary

Cat	Category
EC50	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
HSW	Health and Safety at Work.
LC50	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD50	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible authority.
UEL	Upper Explosive Level
WES	Workplace Exposure Limit

NFPA Ratings : Health : 2
Flammability : 0
Reactivity : 0
4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight,
0 = Insignificant

Disclaimer:
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