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Material Safety Data Sheet

WEGO CHEMICAL & MINERAL CORP

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Date of Revision: 8/2006

Zinc Sulfate

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Zinc Sulfate

Chemical Formula: ZnSO₄.H₂O

CAS Number: 7446-19-7

Other Designations: Zinc Sulfate, monohydrate

Derivation: Derived by the action of sulfuric acid on zinc or zinc oxide.

General Use: Used as mordant in calico-printing, a dietary supplement, a wood preservative, an analytical reagent; to manufacture rayon, lithopone and other zinc salts; with hypochlorite for bleaching paper; in clarifying glue; and for electrodepositing Zn.

Emergency Telephone: 1-888-255-3924 (ChemTel) or 1-800-424-9300 (Chemtrec)

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	EINECS/ELINCS	% wt or % vol
Zinc Sulfate	7446-19-7	231-793-3	100

Trace Impurities:

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Zinc Sulfate	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.

Section 3 - Hazards Identification

☆☆☆☆☆ **Emergency Overview** ☆☆☆☆☆

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

HMIS

H	1
F	0
R	0

PPE[†]

[†]Sec. 8

Potential Health Effects

Primary Entry Routes: Inhalation, ingestion.

Target Organs: Skin, mucous membranes, respiratory tract, cardiovascular system, gastrointestinal tract.

Acute Effects

Inhalation: Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

Eye: Irritant, can cause pain and redness, possible mechanical harm. May cause severe irritation.

Skin: Causes irritation to skin. Symptoms include redness, itching, and pain.

Ingestion: As with other soluble zinc salts, zinc sulfate may hydrolyze into acid if swallowed. Severe irritation and burns of the mouth, throat and digestive system may occur. Symptoms may include vomiting, stomach pain, increased pulse rate without blood pressure decrease, blood pressure decrease, acute pulmonary edema (fluid in the lungs), diarrhea, kidney damage, other gastrointestinal disturbances and hemorrhagic pancreatitis. A fatality following ingestion of 10 grams has been reported.

Carcinogenicity: IARC, NTP, and OSHA do not list zinc sulfate as a carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: Pre-existing skin or respiratory disorders.

Chronic Effects: Signs of chronic intoxication include fatigue, slow tendon reflexes, bloody enteritis (intestinal inflammation), diarrhea, lower white cell count, normocytic anemia (diminished normal red blood cells in circulating blood), central nervous system depression, tremors, and paralysis of the extremities. Repeated or prolonged skin contact with this material or its solutions is irritating and can be damaging.

Section 4 - First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Skin Contact: Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes.

Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Ingestion: Get medical attention.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Note to Physicians: Gastric lavage may be necessary if spontaneous vomiting has not occurred. Before performing nasogastric intubation for large gastrointestinal exposures, consider the possibility of chemical ulceration.

Section 5 - Fire-Fighting Measures

Flash Point: None reported

Flash Point Method:

Burning Rate:

Autoignition Temperature: None reported

LEL: None reported

UEL: None reported

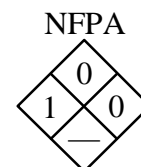
Flammability Classification: Not considered to be a fire hazard.

Extinguishing Media: Use media appropriate to the surrounding fire. Dry chemical or carbon dioxide is recommended since zinc sulfate dissolves in water to produce a corrosive, acidic solution.

Unusual Fire or Explosion Hazards: Sealed containers of this material may rupture from decomposition pressure at high temperatures. The mono- and hepta-hydrates generates pressure at lower temperatures.

Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode.



Section 6 - Accidental Release Measures

Spill /Leak Procedures: Notify safety personnel of spill or leak. Cleanup personnel should protect against inhalation and skin contact. Provide adequate ventilation and avoid dusting or misting conditions in cleanup.

Small Spills: Pick up solids and place in suitable recovery or disposal container. Cover spilled solution with soda ash or sodium bicarbonate; scoop up slurry for disposal.

Large Spills

Containment: For large spills, dike far ahead of spill for later disposal. Do not release into sewers or waterways.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Section 7 - Handling and Storage

Handling Precautions: Material dissolves in water to form an acidic solution. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

Storage Requirements: Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Avoid inhalation of zinc sulfate dust, its solution mist, or skin contact. Be aware of this material's acidity in solution.

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls:

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA.

Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9 - Physical and Chemical Properties

Physical State: solid
Appearance and Odor: white powder/odorless
Odor Threshold:
Vapor Pressure: mm Hg at °F (°C)
Vapor Density (Air=1):
Formula Weight: 179.45
Density:
Specific Gravity (H₂O=1, at 4 °C): 3.35
pH: No information found.

Water Solubility: Soluble
Other Solubilities:
Boiling Point: > 500C (> 932F) Decomposes
Freezing/Melting Point: 238C (460F) Loses water
Viscosity:
Refractive Index:
Surface Tension:
% Volatile:
Evaporation Rate:

Section 10 - Stability and Reactivity

Stability: Zinc sulfate is stable at room temperature in closed containers under normal storage and handling conditions.
Polymerization: Hazardous polymerization cannot occur.
Chemical Incompatibilities: Lead, calcium, strontium salts, borax, alkali carbonates and hydroxides, silver protein and tannins
Conditions to Avoid: Zinc sulfate hydrolyzes in water, producing a corrosive, acidic solution. Avoid exposing zinc sulfate to excessive heat.
Hazardous Decomposition Products: Thermal oxidative decomposition of zinc sulfate (above 1112 °F/600 °C) can produce oxides of sulfur (SO_x) and zinc oxide (ZnO) fumes.

Section 11- Toxicological Information

Toxicity Data:*

Eye Effects:

Standard Draize, Rabbit eye: 420 ug, moderate irritation

Human, oral, TD_{Lo}: 45 mg/kg ingested for 7 continuous days affect the cardiac system (increased pulse rate without a blood pressurdrop), gastrointestinal tract, and blood (normocytic anemia, Sec. 6)

Human, oral, TD_{Lo}: 106 mg/m³ ingested affects the vascular system (decrease in blood pressure), lungs, thorax, and respiration (acute pulmonary edema)

Acute Inhalation Effects:

Human, inhalation, TC_{Lo}: ?? ppm

Acute Oral Effects:

Rat, oral, LD₅₀: 1710 mg/kg

Chronic Effects:

Carcinogenicity:

Mutagenicity: Investigated as a tumorigen, mutagen, reproductive effector

Teratogenicity:

* See NIOSH, *RTECS* (ZH5260000), for additional irritative, mutative, reproductive, tumorigenic, and toxicity data.

Section 12 - Ecological Information

Ecotoxicity: The LC50/96-hour values for fish are between 1 and 10 mg/l. This material is expected to be toxic to aquatic life.
Environmental Fate: No information found.
Environmental Degradation:
Soil Absorption/Mobility:

Section 13 - Disposal Considerations

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.
Container Cleaning and Disposal: Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101): NOT REGULATED

Shipping Name:
Shipping Symbols:
Hazard Class:
ID No.:
Packing Group:
Label:
Special Provisions (172.102):

Packaging Authorizations
 a) Exceptions:
 b) Non-bulk Packaging:
 c) Bulk Packaging:

Quantity Limitations
 a) Passenger, Aircraft, or Railcar:
 b) Cargo Aircraft Only:

Vessel Stowage Requirements
 a) Vessel Stowage:
 b) Other:

Section 15 - Regulatory Information**EPA Regulations:**

RCRA Hazardous Waste Number: Not listed (40 CFR 261.33)

RCRA Hazardous Waste Classification (40 CFR 261.??): Not classified

CERCLA Hazardous Substance (40 CFR 302.4) listed/unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a), CAA, Sec. 112

CERCLA Reportable Quantity (RQ), 1000 lb (454 kg)

SARA 311/312 Codes:

SARA Toxic Chemical (40 CFR 372.65): Not listed

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed, Threshold Planning Quantity (TPQ)

OSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Not listed

OSHA Specifically Regulated Substance (29CFR 1910.1000): Not listed

State Regulations:**Section 16 - Other Information**

Disclaimer: All information, recommendations and suggestions appearing herein are based upon sources believed to be reliable: However, it is the users responsibility to determine the safety, toxicity and suitability for its own use of this product. WEGO CHEMICAL & MINERAL CORP. DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE USE BY OTHERS OF THIS PRODUCT.