

Material Safety Data Sheet

AG Specialties Brand Zinc Sulfate

Section 1 – Product and Company Identification

Product Name: Zinc Sulfate 35.5%
Trade Names: AG SPECIALTIES BRAND ZINC SULFATE
Synonyms: Zinc Sulfate Monohydrate
Chemical Family: Inorganic Salt
MSDS Creation Date: July 2000
MSDS Current revision date: None
Distributed by: AG Specialties LLC; 12220 SW Grant Ave; Tigard, OR 97223; 877-601-7670
EMERGENCY: CHEMTREC (24 Hour Emergency Response) 1-800-424-9300

Section 2 – Composition / Information on Ingredients

Ingredient Name	CAS Number	%wt
Zinc Sulfate Monohydrate	7446-19-7	>99
	7733-02-0 (anhydrous form)	

Section 3 – Hazards Identification

Emergency overview: White free-flowing granules that may cause irritation to the skin and eyes (possibly severe). Product dusts may irritate respiratory tract. Harmful if swallowed.

NFPA Rating: Health=2, Fire=0, Reactivity=0

Potential Health Effects:

Inhalation: May cause irritation of the nasal membranes and upper respiratory tract, possibly severe. Significant exposures may result in difficulty breathing, low blood pressure, dizziness, bluish skin color and lung congestion.

Skin Contact: May cause irritation, possibly severe.

Eye Contact: Contact may cause irritation, possibly severe. Additional effects may include tearing and/or blurred vision.

Ingestion: May irritate or cause burns to digestive tract. Significant exposures may cause effects such as fever, nausea, vomiting, diarrhea, stomach pain, blood in the stool, inability to urinate, low blood pressure, kidney damage, liver damage and convulsions.

Long-Term and/or delayed effects: Continued and prolonged overexposure may result in digestive disorders, kidney and/or liver damage.

CARCINOGEN STATUS: OSHA: Not listed NTP: Not listed IARC: Not listed

Section 4 – First aid Measures

Inhalation: Remove from exposure area to fresh air immediately. If breathing is difficult, oxygen may be administered by a qualified operator. Keep person warm and at rest. Get medical attention for irritation or any other symptom.

Skin Contact: Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and rinse with water until no evidence of product remains. Get medical assistance for irritation, burns or any other symptom.

Eye Contact: Flush eyes immediately with large amounts of water or normal saline solution, occasionally lifting upper and lower lids until no evidence of product remains (approximately 15-20 minutes). Cover with sterile bandages. Get medical attention immediately.

Ingestion: Dilute the product immediately with large amounts of water or milk. Do not induce vomiting unless directed to do so by a doctor or other medical professional. If vomiting occurs, keep head lower than hips to prevent introduction of fluid into the lungs. Get medical attention immediately.

NOTE TO PHYSICIAN: The decision as to whether the severity of poisoning requires administration of any antidote and actual dose required should be made by qualified medical personnel. The antidote for poisoning from zinc salts is calcium disodium edetate (oral or IV). Dreisbach, Handbook of Poisoning, 12th Edition.

Section 5 – Fire-Fighting Measures

Flash Point: None

AutoIgnition Temperature: Not Determined

Fire and Explosion Hazard: Product burns only with great difficulty but will decompose in the heat of a fire. Containers involved in a fire may rupture (possibly explosively) releasing decomposition products.

Extinguishing Media: Use any standard agent suitable for surrounding structural fire or for other chemicals that may be involved.

Firefighting: Wear appropriate self-contained positive pressure breathing apparatus. Move product from fire area if you can without risk. Avoid breathing vapors; keep upwind. Dike area to prevent runoff and contamination of water sources.

Hazardous Combustion Products: Thermal decomposition may include toxic and hazardous oxides of zinc and sulfur.

Section 6 – Accidental Release Measures

In Case of Spill: Pick up dry spills by scooping, shoveling or vacuuming and place into containers for reuse or disposal. Wear respirator, protective clothing and gloves. Keep unnecessary people away. Isolate hazard area and deny entry to avoid material dispersal. Do not allow product and/or runoff to enter sewars or waterways.

Section 7 – Handling and Storage

Storage: Store in a cool, dry place. Protect from exposure to fire.

Normal Handling: Avoid contact with skin and eyes. Do not breath product dusts. Wash thoroughly after handling.

Section 8 – Exposure Controls / Personal Protection

Exposure Limits

Ingredient	OSHA PEL	ACGIH TLV	OTHER VALUES
No ingredients	----	----	----

*= ACGIH Biological Exposure Value

**= AIHA Workplace Environmental Exposure Level

Ventilation: Use of local exhaust is recommended at product transfer points and where dusty conditions exist.

Eye Protection: Wear safety glasses. Use of splash shields or safety goggles is recommended for handling product solutions or for very dusty conditions.

Clothing: Wear trousers and long sleeved shirt to avoid skin contact with this product. Clean work clothing before taking them home (preferred) or launder separately from household laundry.

Gloves: Wear cotton or canvas protective gloves to prevent contact with this product. Use rubber gloves if it is likely material may become moist or wet.

Respirator: For normal product handling, use an NIOSH approved air-purifying dust respirator. For extremely dusty conditions, the use of a full-face air purifying particulate respirator is recommended.

EMERGENCY WASH FACILITIES: Where there is the potential that an employee's eyes and/or skin may be exposed to this product, the employer should provide an eye wash fountain and safety shower or another source of running water within the immediate work area.

Section 9 – Physical and Chemical Properties

Description: White, free-flowing granules

Molecular Formula: ZnSO₄ (zinc ingredient-anhydrous form)

Molecular Weight: 179.46 (zinc sulfate monohydrate); 161.44 (anhydrous form of zinc sulfate)

ph: 5.0 @ 10% solution

Melting Point: Decomposes above 500 degrees C (932 degrees F)

Boiling Point: Not applicable

Vapor Pressure: Not applicable

Water Solubility: 50% by weight

Solvent Solubility: Insoluble in alcohol

Specific Gravity: 3.28

Section 10 – Stability and Reactivity

Reactivity: Stable under normal temperatures and pressures.

Conditions to Avoid: Avoid contact with strong oxidizers and/or excessive heat. Do not allow spilled material to contaminate water sources.

Incompatibilities: Contact with strong oxidizers may result in a fire and explosion hazard.

Hazardous Decomposition: Thermal decomposition products may include toxic and hazardous oxides of zinc and sulfur.

Polymerization: Has not been reported to occur under normal temperatures and pressures but may occur in fire conditions.

Section 11 – Toxicological Information

Toxicological information listed below is for Zinc Sulfate (anhydrous).

Acute Toxicity:

LD50: 1710 mg/kg, oral, rat

LD50: 245mg/kg, oral, mouse

Local Effects: Solutions may be corrosive-inhalation, skin, eye, ingestion.

Eyes: dose-420 ug; moderate (rabbit)

Inhalation: Inhalation of dust may cause irritation of the respiratory tract with sore throat, coughing, shortness of breath, labored breathing, pain in the nose, mouth and throat, and burns of the mucous membranes. If sufficient quantities are inhaled, pulmonary edema may develop, often with a latent period of 5-72 hours. The symptoms may include tightness in the chest, dyspnea, frothy sputum, cyanosis, and dizziness. Physical findings may include weak, rapid pulse, hypotension, hemoconcentration, and moist rales.

Ingestion: Ingestion may cause a burning pain in the mouth and throat, fever, nausea, violent vomiting with severe abdominal pain, watery or bloody diarrhea, prostration, tenemus, retching, hyperglycemia, anuria, liver damage, kidney damage with albuminuria, acetonuria, and glycosuria, hypotension, sudden collapse, and convulsions.

Delayed / Chronic:

CARCINOGEN STATUS: Data not available. Some mutagenic screens have been run with mixed results.

CHRONIC EXPOSURE: Depending on the concentration and duration of exposure, repeated or prolonged exposure may cause inflammatory and ulcerative changes in the mouth and possibly bronchial and gastrointestinal disturbances.

Prolonged ingestion of 33,000 mg/kg in drinking water resulted in severe anemia in mice.

Section 12 – Ecological Information

Acute Aquatic Toxicity:

LC50 rainbow trout 4.76 MG/L/48 HR, hard water / continuous flow conditions.

LC50 rainbow trout 4.6 ppm/96 hr/fresh water / conditions of bioassay not specified

Degradability: No data available

Log Bioconcentration Factor (BCF): No data available

Log Octanol/Water partition coefficient: No data available

Section 13 – Disposal Considerations

Product (as shipped) is not a RCRA hazardous waste if discarded. Observe all federal, state and local regulations when disposing of this product.

Section 14 – Transport Information

This product is not regulated in surface transportation in non-bulk quantities. The information below is for shipments exceeding 1,000 pounds in a single package, container, truck, or railcar.

US DOT Shipping name: Environmentally hazardous substances, solid, n.o.s. (Zinc Sulfate), 9, UN 3077, PG III, ERG 31

US DOT Hazard Class: 9 – Miscellaneous hazardous material.

US DOT Identification Number: UN 3077

US DOT Packing Group: III

US DOT Label Code: 9

Reportable Quantity: 1,000 lbs (454 kg)

Section 15 – Regulatory Information

TSCA Status: All ingredients are listed on the TSCA Inventory of Chemical Substances.

Other TSCA Issues: None

SARA 311 Classification: Acute Hazard.

SARA 313 Notification: There are no ingredients on the SARA 313 reporting list.

CERCLA RQ's and TPQ's: Zinc Sulfate has a reportable quantity (RQ) of 1,000 lbs.

California Proposition 65: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Canadian Inventory: All ingredients are listed on the Canadian Domestic Substances List.

WHMIS: This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations. Classification: D2B

Section 16 – Other Information

NFPA Ratings: Health: 2, Flammability: 0, Reactivity: 0

Label Hazard Warning: WARNING! HARMFUL IF SWALLOWED, AFFECTS THE LIVER AND KIDNEYS. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Label Precautions:

- Avoid contact with eyes, skin and clothing.
- Wash thoroughly after handling.
- Avoid breathing dust.
- Keep container closed.
- Use only with adequate ventilation.

Label First Aid: If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In case of contact, wipe off excess material from skin then immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases, get medical attention. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. Customers are responsible for compliance with local, state and federal regulations that may be pertinent in the storage, application and disposal of this product.

Product Use: Fertilizer and animal feed ingredient additive.

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