

**FOR EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT, CALL:
CHEMTREC 1-800-424-9300**

Section 1—Chemical Product and Company Identification

Product Name:	AgriSolutions™ Zinc Sulfate 35.5%
Common Name:	Zinc Sulfate Monohydrate
Chemical Description:	ZnSO ₄ ·H ₂ O
Manufacturer's Name: WINFIELD SOLUTIONS, LLC P. O. Box 64589 St. Paul, MN 55164-0589	Medical Emergency Telephone Number: 1-877-424-7452 MSDS Revision Date: 09/20/2010 Supersedes document dated 2/20/2009

Section 2—Hazards Identification

Emergency Overview: Colorless to white, odorless granules or powder. Not flammable or explosive, but will decompose in extreme heat to produce toxic sulfur oxide gas and zinc oxide fume. May cause irritation to skin and eyes (possibly severe).

CAUTION: Keep out of reach of children. Route(s) of Entry: Eyes, Inhalation, Skin, and Ingestion.

Health Hazards (Acute and Chronic):

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.

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

Skin: May irritate skin. Prolonged or repeated exposure may lead to reddening of skin, rash, dermatitis, or other skin reactions.

Ingestion: Harmful if swallowed. 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.

Medical Conditions Generally Aggravated by Exposure:

None known. Preexisting respiratory conditions may be aggravated by exposure to dusts.

Section 3—Composition Information on Ingredients

Ingredient	% (wt)	CAS Reg. #
Zinc Sulfate Monohydrate	97.5 – 99.0%	7446-19-7

NFPA HAZARD RATING:

0	Least		
1	Slight	2	Health
2	Moderate	0	Flammability
3	High	0	Reactivity
4	Severe		

Section 4—First Aid Measures

Inhalation: Remove person to fresh air and assist breathing as needed. Seek medical attention for irritation or any other symptom.

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.

Eyes: Flush with clean water for at least 15 minutes. Lift eyelids to facilitate irrigation. Cover with sterile bandages. Get medical attention immediately.

Skin: Remove contaminated clothing, shoes, and items such as watchbands or belts. Wash gently and thoroughly with water and soap until no evidence of product remains. If irritation persists, repeat flushing. Get medical attention for irritation, burns, or any other symptom.

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

Section 5—Fire and Explosion Hazard Data

Extinguishing Media: Use any means of extinction appropriate for the surrounding fire conditions such as water spray, carbon dioxide, dry chemical or foam.

Special Fire Fighting Procedures: As with any fire, fire fighters should be fully trained and wear full protective clothing including an approved, self-contained breathing apparatus which supplies a positive air pressure within a full face piece mask. 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.

Unusual Fire and Explosion Hazards: 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.

Section 6—Accidental Release Measures

Small Spills: Pick-up dry spills by scooping, shoveling or vacuuming and place into containers for reuse or disposal. Protect against skin and eye contact as well as inhalation of dusts. Avoid generating dusts.

Large Spills: 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.

Containment: Do not allow product and/or runoff to enter sewers or waterways. Place contaminated material in suitable, labeled containers for final disposal. Dispose of waste material consistent with the requirements of waste disposal authorities.

Section 7—Precautions for Safe Handling and Use

Precautions to Be Taken in Handling and Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Protect from physical damage. Keep container closed when not in use. Protect from exposure to fire.

Other Precautions: Consult Local, State, and Federal regulations pertaining to storage and disposal.

Section 8—Control Measures/Personal Protection

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

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations well below occupational exposure limits for general Particulates, Not Otherwise Specified (PNOS).

Protective Gloves: Wear chemically protective gloves.

Eye Protection: Wear protective eyeglasses or chemical safety goggles. Contact lenses are not eye protective devices.

Other Protective Clothing or Equipment: Wear chemically protective coveralls or long-sleeved work clothes to prevent prolonged or repeated skin contact.

Work/Hygienic Practices: Never eat, drink, nor smoke in work areas. Practice good hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9—Physical/Chemical Characteristics

Physical State:	Solid	Specific Gravity g/mL (H₂O=1):	3.28
Vapor Pressure (mm Hg):	Not determined	Freezing Point:	Water loss at 238°C. Decomposition at 680°C.
Vapor Density (Air=1):	Not determined	Boiling Point:	Not applicable
Solubility in Water (wt %):	50% by weight	pH (10% solution in water):	4.0 – 6.0
Appearance and odor:	Colorless to white, odorless granules or powder.	Flash Point:	None

Section 10—Reactivity Data

Stability: This material is stable and not considered reactive under normal temperatures and pressures.

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

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

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

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

Section 11—Toxicological Information

Information below is for zinc sulfate (anhydrous).

Eye Effects: Solid may cause local eye irritation, but does not cause tissue damage. Contact with solutions may cause irritation.

Skin Effects: Dust or fume from burning may cause local irritation.

Acute Inhalation Effects: 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.

Acute Oral/Ingestion Effects: LD50 = 1710 mg/kg (oral, rat); LD50 = 245 mg/kg (oral, mouse)
Ingestion of large doses can cause anemia and stomach symptoms. Ingestion in excessive quantities can irritate the stomach resulting in abdominal pain, nausea, diarrhea and spontaneous vomiting.

Chronic Effects: No significant chronic effects.

Mutagenicity: Not determined

Teratogenicity: Not determined

Carcinogenicity: NTP: Not listed IARC: Not listed OSHA: Not listed

Section 12—Ecological Information

Soil Absorption/Mobility: The mobility of zinc in soil and its degree of bioaccumulation is dependent on soil chemical conditions.

Ecotoxicological Information: May be toxic to aquatic organisms, especially fish, with water hardness, pH, and dissolved carbon levels being regulating factors.

Section 13—Disposal Considerations

Disposal: Dispose of in accordance with all applicable Federal, state and local laws and regulations.

Disposal Regulatory Requirement: Follow applicable Federal, State, and Local regulations.

RCRA Characteristics: None

Section 14—Transport Information

Not regulated in packages of less than 1,000 lbs. For packages of 1,000 lbs and greater:

UN3077, Environmentally Hazardous Substance, Solid, N.O.S. (zinc sulfate), 9, PG III, RQ

Section 15—Regulatory Information

TSCA Inventory: This chemical is listed on the TSCA inventory.

SARA Title III, Section 302: None listed

SARA Title III, Section 311/312:	Immediate: Yes	Delayed: No
Sudden Release of Pressure: No	Fire: No	Reactive: No

SARA Title III, Section 313: None listed

CERCLA: Zinc sulfate has an RQ of 1,000 lbs.

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

Section 16—Other

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