

SECTION 1: IDENTIFICATION**Product Identifier****Product Name:** EJ-600 ZnS:Ag Phosphor**Product Form:** Substance**Intended Use of the Product**

Radiation detection applications.

Name, Address, and Telephone of the Responsible Party

Company/Manufacturer: Eljen Technology
Address: 1300 W. Broadway
SWEETWATER, TEXAS 79556
USA
Phone: (325) 235-4276
Fax: (325) 235-0701
Website: www.eljentechnology.com

Emergency Telephone Number

Emergency Number: CHEMTREC (24 hours)
(800) 424-9300

SECTION 2: HAZARDS IDENTIFICATION**Classification of the Substance or Mixture****Classification (GHS-US):**

Respiratory Sensitization, Category 1 H334

Skin Sensitization, Category 1 H317

Label Elements**GHS-US Labeling:****Hazard Pictograms (GHS-US):****Signal Word (GHS-US):** Danger**Hazard Statements (GHS-US):**

H317 May cause an allergic skin reaction.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary Statements (GHS-US):

P261 Avoid breathing dust.

P272 Contaminated work clothing must not be allowed out of the workplace.

P280 Wear protective gloves.

P284 Wear respiratory protection.

P302 + P352 IF ON SKIN: Wash with soap and water.

P304 + P340 IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

P321 Specific treatment (see section 4 on SDS).

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P342 + P311 If experiencing respiratory symptoms: Call a poison center or a doctor.

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P363 Wash contaminated clothing before reuse.
P501 Dispose of contents/container in accordance with all local, regional, national, provincial, territorial, and international regulations.

Hazards Not Otherwise Classified

Contact with acids liberates very toxic gas (hydrogen sulfide).

Components With Unknown Acute Toxicity (GHS-US)

Not applicable.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Synonyms: Silver-Activated Zinc Sulfide, Modified Zinc Sulfide (ZnS:Ag, Cl)

Formula: ZnS:Ag

CAS#: 68611-71-2

Hazardous Impurities and/or Stabilizing Additives: None

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur, go into open air and ventilate suspected area. Call a poison center or a doctor if you feel unwell.

Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if skin irritation develops or persists.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if eye irritation develops or persists.

Ingestion: Rinse mouth. Do not induce vomiting. Call a poison center or a doctor if you feel unwell.

Most Important Symptoms and Effects, Both Acute and Delayed

Inhalation: May cause irritation to upper respiratory tract and coughing. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin Contact: Material can enter body through an open wound in the skin. Prolonged contact may cause an allergic skin reaction.

Eye Contact: Abrasive action of the powder can cause severe irritation.

Ingestion: May cause gastrointestinal disturbances, including nausea, vomiting and diarrhea. Stomach acids may liberate highly toxic hydrogen sulfide fumes.

Chronic Symptoms: None known.

Indication of Any Immediate Medical Attention and Special Treatment Needed

No information available.

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SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Agents: Product itself does not burn. Use extinguishing media suitable for the surrounding fire.

Special Hazards Arising from the Substance or Mixture

Fire Hazard: Not flammable.

Explosion Hazards: Not explosive.

Reactivity: Substance reacts with strong acids and liberates very toxic and explosive gas (hydrogen sulfide).

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting instructions: Collect contaminated fire extinguishing water. Do not allow run-off from firefighting to enter drains, surface water, or soil.

Protection During Firefighting: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Wear protective clothing appropriate to the surrounding fire.

Hazardous Combustion Products: When material is exposed to high temperatures it may produce sulfur oxides and/or hydrogen sulfide. Do not inhale combustion gases.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid generation of dust.

Protective Equipment: Use appropriate personal protection equipment (PPE). If airborne dust is generated, use a respirator approved under appropriate government standards such as NIOSH (US).

Emergency Procedures: Evacuate unnecessary personnel. Ventilate the area.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Contain and collect as any solid.

Methods for Cleaning Up: Collect spilled product and place in closed containers. Spilled product must never be returned to the original container for recycling. Clean spills using methods which avoid dust generation, such as vacuuming. If a vacuum is used, ensure that it has an appropriate filter to prevent airborne dust levels which exceed the exposure limits according to appropriate federal regulations. Wet dust mopping or wet clean-up is preferred to reduce dusting. Wash spill site thoroughly with water and detergent.

Reference to Other Sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Wash hands and forearms thoroughly after handling.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Maintain good housekeeping procedures to prevent accumulation of dust. Avoid transfer methods which produce free dust distribution in the work area. If dust accumulations occur, they should be eliminated periodically. Use clean-up methods which minimize dust generation.

Storage Conditions: Store away from strong acids, strong oxidizers, flammable materials, and explosive substances. Keep dry. Keep only in original containers.

Incompatible Materials: Oxidizing agents. Strong acids.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

No exposure limits have been established for this product. The substance should be treated as a nuisance dust. TLV 1 mg/m³. The compound contains less than 0.5% silver as part of its chemical structure.

Exposure Controls

Appropriate Engineering Controls: Local exhaust ventilation is recommended to minimize airborne dust exposure.

Personal Protective Equipment

Eye/Face Protection: Wear safety glasses with side shields or goggles.

Skin and Body Protection: Wear gloves to prevent product from drying out skin on hands. Wear general protective clothing and aprons if exposure to large quantities is possible. Protective clothing should be washed regularly. Do not shake to remove dust.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Appearance	: White powder
Particle Size	: 6.5 µm
Odor	: None
Odor Threshold	: None
pH	: 8.5 – 9.5 (in water)
Melting Point	: > 1850°C
Freezing Point	: No data available
Boiling Point/Boiling Range	: No data available
Flash Point	: No data available
Evaporation Rate	: No data available
Flammability (solid, gas)	: No data available
Lower Flammability/Explosion Limit	: Not explosive dust
Upper Flammability/Explosion Limit	: Not explosive dust
Vapor Pressure	: Not applicable
Vapor Density	: Not applicable

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Density	: 4.13 g/cm ³
Bulk Density	: 1.4 kg/liter
Solubility	: Readily soluble in high concentrated acids (>10%) with liberation of hydrogen sulfide (gas is explosive and very toxic if inhaled). Virtually insoluble in water.
Partition Coefficient (n-octanal/water)	: No data available
Auto-Ignition Temperature	: Not applicable
Decomposition Temperature	: > 500°C in air
Viscosity	: Not applicable
Explosive Properties	: Not applicable
Oxidizing Properties	: Not applicable

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Substance reacts with strong acids and liberates very toxic and explosive gas (hydrogen sulfide).

Chemical Stability: Stable under recommended storage and handling conditions. Oxidizes in air and decomposes in moist air. Decomposition takes place at temperatures greater than 500°C in air.

Possibility of Hazardous Reactions: Substance reacts with strong acids and liberates very toxic and explosive gas (hydrogen sulfide).

Conditions to Avoid: Contact with strong acids. Temperatures greater than 500°C without directed outlet of generated gas.

Incompatible Materials: Oxidizing agents. Strong acids.

Hazardous Decomposition Products: Hydrogen sulfide when in contact with strong acids. Sulfur oxides when exposed to temperatures greater than 500°C.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity: Not classified.

LD50/LC50 Values That Are Relevant for Classification (Components):

Zinc Sulfide (ZnS) (CAS# 1314-98-3)	LD50 (Oral – Rat)	2000 mg/kg
	LD50 (Dermal – Rabbit)	2000 mg/kg
	LC50 (Inhalation – Rat)	5.04 mg/L/4h

Skin Corrosion/Irritation: Not classified.

Serious Eye Damage/Irritation: Not classified.

Respiratory or Skin Sensitization: May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ Cell Mutagenicity: Not classified.

Carcinogenicity: Not classified.

NTP	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by NTP.
IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by OSHA.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH.

Reproductive Toxicity: Not classified.

Specific Target Organ Toxicity (Single Exposure): Not classified.

Specific Target Organ Toxicity (Repeated Exposure): Not classified.

Aspiration Hazard: Not classified.

Symptoms Related to the Physical, Chemical and Toxicological Characteristics

Symptoms/Injuries After Inhalation: May cause irritation to upper respiratory tract and coughing. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/Injuries After Skin Contact: Material can enter body through an open wound in the skin. Prolonged contact may cause an allergic skin reaction.

Symptoms/Injuries After Eye Contact: Abrasive action of the powder can cause severe irritation.

Symptoms/Injuries After Ingestion: May cause gastrointestinal disturbances, including nausea, vomiting and diarrhea. Stomach acids may liberate highly toxic hydrogen sulfide fumes.

Chronic Symptoms: None known.

Additional Information

Persons suffering from lung dysfunction should avoid exposure to dust. The information is presented here to the best of our knowledge. The chemical, physical, and toxicological properties of this product have not been thoroughly investigated.

SECTION 12: ECOLOGICAL INFORMATION

Avoid release to the environment. Do not allow product to reach ground water, water course or sewage system.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Substance may generally be disposed of in standard dry waste containers. Dispose of waste material in accordance with all local, regional, national, and international regulations.

SECTION 14: TRANSPORT INFORMATION

In Accordance with DOT

Not regulated for transport.

In Accordance with IMDG

Not regulated for transport.

In Accordance with IATA

Not regulated for transport.

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SECTION 15: REGULATORY INFORMATION

Safety, Health, and Environmental Regulations Specific for the Substance or Mixture

US Federal Regulations

TSCA Inventory	Substance is listed.
SARA 313 Components	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards	No SARA hazards.

US State Regulations

This product does not appear on any US State lists.

HMIS Rating

Health : 1
Flammability : 0
Reactivity : 0

SECTION 16: OTHER INFORMATION

Date of Issue: 12/16/2015

Revision Date: 8/17/2016

Other Information: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Party Responsible for the Preparation of This Document:

Eljen Technology (325) 235-4276

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.