



## Material Safety Data Sheet

**Identity:** AZO (Aluminum doped Zinc Oxide)

**Formula:** Al<sub>2</sub>O<sub>3</sub>/ZnO

### SECTION I - GENERAL INFORMATION

**Manufacturer:** Advanced Engineering Materials Limited (AEM)

The information below is believed to be accurate and represents the best information available to AEM. However, AEM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

### SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

<u>CAS #</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>	<u>%</u>
1314-13-2 /1344-28-1	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	N/A

### SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

**Physical States:** Solid

**Boiling Point:** N/A

**Vapor Pressure (vs. air or mm Hg):** N/A

**Melting Point:** N/A

**Specific Gravity: (H<sub>2</sub>O=1):** N/A

**Evaporation Rate:** N/A

**Flash Point:** N/A

**Solubility in Water:** Insoluble

**Appearance and odor:** White to yellowish powder and pieces, odorless

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

**Method Used:** Unknown

**Explosive Limits:** LEL: N/A

UEL: N/A

**Extinguishing Media:** Use suitable media for surrounding materials and type of fire.

**Special Fire Fighting Procedures:**

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from the fire are hazardous. Isolate runoff to prevent environmental pollution.

**Unusual Fire and Explosion Hazards:**

-When heated to decomposition zinc oxide may emit toxic fumes of ZnO. may explode when mixed with chlorinated rubber. violent reaction with magnesium, linseed oil. may polymerize violently (heat) with ethylene oxide. reacts violently (flames) with chlorine trifluoride.



## SECTION V - REACTIVITY DATA

**Stability:** Stable

**Conditions to Avoid (instability):** Decomposition will not occur if used and stored according to specifications.

**Incompatibility:** Aluminum, hexachloroethane, chlorinated rubber, linseed oil, Magnesium acids, bases, oxidizing agents, interhalogens, halocarbons

**Hazardous Decomposition or Byproducts:** Zinc Oxide, Aluminum Oxide

**Hazardous Polymerization:** will not occur.

**Conditions to avoid (hazardous polymerization):** None.

## SECTION VI - HEALTH HAZARD DATA

**Routes of entry:** Inhalation? Fatal    Skin? May cause irritation    Eyes? May cause irritation  
Ingestion? Fatal    Other? No

Aluminum compounds have many commercial uses and are commonly found in industry. Many of these materials are active chemically and thus exhibit dangerous toxic and reactive properties. Inhalation of fine aluminum oxide particles is associated with shaver's disease (Sax, Dangerous Properties of Industrial Materials, eighth edition).

Zinc compounds have variable toxicity, but generally are of low toxicity. Zinc is not inherently a toxic element. However, when heated, it evolves a fume of zinc oxide which, when inhaled fresh, can cause a disease known as "brass founders" "ague," or "brass chills". Zinc oxide dust which is not freshly formed is virtually innocuous. There is no cumulative effect from the inhalation of zinc fumes. (Sax, Dangerous Properties of Industrial Materials, eighth edition).

### **Signs and Symptoms of Overexposure:**

Effects of Exposure: (To the best of our knowledge the chemical, physical and toxicological properties of aluminum selenide have not been thoroughly investigated and recorded.)

### **Health Hazards (Acute and Chronic):**

**Inhalation:** Remove person to fresh air. provide artificial respiration if breathing has stopped.

**Ingestion:** Seek medical attention if symptoms persist.

**Skin:** Wash thoroughly with soap & water.

**Eye:** Flush eyes with lukewarm water, lifting upper and lower eyelids, for atleast 20 mins. seek medical attention if symptoms persist.

### **Target Organs:**

**Carcinogenicity:** NTP? No    IARC Monographs? No    OSHA Regulated? No

**Medical Conditions Aggravated by Exposure:** Respiratory conditions first aid.



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### **Emergency and First Aid Procedures:**

**Inhalation:** Remove to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention.

**Ingestion:** Provide 1-2 glass of milk or water and induce vomiting if conscious, seek immediate medical attention.

**Skin:** Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, medical help will be needed if symptom persist.

**Eye:** Rinse eye for several minutes under running water. then consult a doctor if symptoms persists.

## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

### ***Steps to be taken in case material is released or spilled:***

Wear appropriate respiratory and protective equipment. isolate spilled area and provide ventilation. vacuum up spill area with high efficiency particulate absolute air filter and provide ventilation take care not raise dust.

### ***Waste disposal method:***

In accordance with local, state and federal regulations.

### ***Hazard Label Information:*** N/A

***Precaution:*** This safety data sheet should be used in conjunction with technical sheets. it does not replace them. the information given is based on our knowledge of this product, at the time of publication. it is given in good faith. the attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. this does not in any way excuse the user from knowing and applying all the regulations governing his activity. it is the sole responsibility of the user to take all precautions required in handling the product. the aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established