

# MATERIAL SAFETY DATA SHEET

## I PRODUCT IDENTIFICATION

**Trade Name:** Zinc Oxide **Chemical Family:** Metal oxide  
**Formula:** ZnO **CAS #:** 1314-13-2  
**Synonyms:** Natural zincite; flowers of zinc; philosopher's wool; zinc white; CI pigment

## II HAZARDOUS INGREDIENTS

<u>Hazardous Components</u>	<u>%</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>	<u>Other Limits</u>
Zinc Oxide	0-100	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	5 mg/m <sup>3</sup> (respirable)

<u>Sec. 302</u>	<u>Sec. 304</u>	<u>Sec. 313</u>
No	No	No

**HMIS Ratings:** **Health:** 2 **Flammability:** 0 **Reactivity:** 0 **Protective Equipment:** E; glasses, gloves, dust resp.

## III PHYSICAL DATA

<b>Boiling Point:</b>	N/E or N/A	<b>Melting Point:</b>	1975 °C
<b>Vapor Pressure:</b>	N/E or N/A	<b>Specific Gravity (water=1):</b>	5.606
<b>Vapor Density (Air=1):</b>	N/E or N/A	<b>% Volatiles by Weight:</b>	N/E or N/A
<b>Appearance and Odor:</b>	White to yellowish powder and pieces, no odor.	<b>Solubility in H<sub>2</sub>O:</b>	Insoluble

## IV FIRE AND EXPLOSION HAZARDS DATA

**Flash Point:** N/A **Autoignition Temperature:** N/A  
**Explosive Limits:** **Upper:** N/A **Lower:** N/A

**Extinguishing Media:** Use suitable extinguishing 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 fire are hazardous. Isolate runoff to prevent environmental pollution.

**Unusual Fire & 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.

## V HEALTH HAZARD INFORMATION

### **Effects of Exposure:**

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).

### **Acute Effects:**

**Inhalation:** May cause respiratory tract irritation with nasopharyngitis and laryngitis.

**Ingestion:** Moderately toxic by ingestion.

**Skin:** May cause irritation.

**Eye:** May cause irritation

### **Chronic Effects:**

**Inhalation:** May cause human systemic effects.

**Ingestion:** No chronic health effects recorded.

**Skin:** No chronic health effects recorded.

**Eye:** No chronic health effects recorded.

**Target Organs:** No target organs recorded.

**Medical Conditions Generally Aggravated by Exposure:** Pre-existing respiratory disorders.

**Carcinogenicity:** NTP: No      IARC: No      OSHA: No

### **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:** Give 1-2 glasses of milk or water and induce vomiting; seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

**SKIN:** Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention if symptoms persist.

**EYE:** Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

### **VI REACTIVITY DATA**

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**Stability:** Stable

**Conditions to Avoid:** None

**Incompatibility (Materials to Avoid):** Aluminum, hexachloroethane, chlorinated rubber, linseed oil, magnesium.

**Hazardous Decomposition Products:** Zinc oxide

**Hazardous Polymerization:** Will not occur.

### **VII SPILL OR LEAK PROCEDURES**

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**Steps to Be Taken in Case Material Is Released or Spilled:** Wear appropriate respiratory and protective equipment specified in Section VIII- Special Protection Information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

**Waste Disposal Method:** Dispose of in accordance with Local, State and Federal waste disposal regulations.

## VIII SPECIAL PROTECTION INFORMATION

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**Respiratory Protection (Specify Type):** NIOSH/MSHA - approved dust respirator.

**Ventilation:** Local exhaust ventilation may be necessary to control any air contaminants to within their PELs or TLVs during the use of this product. Good general exhaust is recommended.

**Protective Gloves:** Rubber gloves

**Eye Protection:** Safety glasses

**Other Protective Equipment or Clothing:** Protective gear suitable to prevent contamination. Barrier creams may help prevent irritation in hypersensitive individuals.

## IX ADDITIONAL COMMENTS

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**Precautions to Be Taken in Handling and Storage:** Store in a tightly sealed container. Store in a cool, dry area. Wash thoroughly after handling.

**Work Practices:** Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air. Maintain eyewash capable of sustained flushing, safety drench shower and facilities for washing.

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. ESPI shall not be held liable for any damage resulting from handling or from contact with the above product.

Issued by: S. Dierks  
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