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Current Version: 1.0  
Revision Date: May 18, 2014

## Material Safety Data Sheet

Identity: Zinc Oxide Sputtering Target

Formula: 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

Molecular weight: 81.38

CAS #	OSHA PEL	ACGIH TLV	%
1314-13-2	5mg/m <sup>3</sup>	5mg/m <sup>3</sup>	100%

### SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

Density: 5.606g/cm<sup>3</sup> at 20 °C

Melting Point: 1975.0 °C

Vapor Pressure (vs. air or mmHg): N/A

Evaporation Rate: N/A

Solubility in water: Insoluble

*Appearance and odor:* White to yellow powder and pieces, no odor

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

*Flash Point:* N/A *Method Used:* Non-flammable *Explosive Limits:* LEL: N/A UEL: N/A

*Extinguishing Media:* Use suitable extinguishing agent for surrounding material 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 and Explosion Hazards:*

When heated to decomposition, zinc oxide may emit toxic fumes of ZnO. May explode when mixed with chlorinated rubber and has a violent reaction with magnesium, and linseed oil

### SECTION V - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid (stability):* None

*Incompatibility:* Aluminum, hexachloroethane, chlorinated rubber, linseed oil, magnesium



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*Hazardous Decomposition or Byproducts:* Zinc oxide  
*Hazardous Polymerization:* Will not occur  
*Conditions to avoid (hazardous polymerization):* None

SECTION VI - HEALTH HAZARD DATA

Health Hazards (Acute and Chronic):

*Inhalation:* Dry throat, weakness, coughing, aches, chills, fever, nausea and vomiting.  
*Ingestion:* Coughing, shortness of breath and sweating  
*Skin:* Redness and itching  
*Eye:* redness, itching and watering

*Target Organs:* None recorded  
*Carcinogenicity:* NTP? No      IARC Monographs? No      OSHA Regulated? No  
*Medical Conditions Aggravated by Exposure:* Pre-existing respiratory disorders

Emergency and First Aid Procedures:

*Inhalation:*      Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; 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, and seek medical attention if symptoms persist  
*Eye:*      Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention

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 specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. 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 state, local, and federal regulations.  
  TOXIC FOR WATER ANIMALS

*Hazard Label Information:* Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

SECTION VIII - CONTROL MEASURES

*Protective Equipment Summary (Hazard Label Information):*  
NIOSH approved respirator, impervious rubber gloves, safety glasses, clothes to prevent contact.  
*Ventilation:*



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Local Exhaust: To maintain concentration at low exposure levels.

Mechanical (General): Recommended.

*Work/Hygienic/Maintenance 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 or smoking. Do not blow dust off clothing or skin with compressed air.

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