



Rm. 408, Building 1, No. 31, Yinshan Road
Yuelu District, Changsha, Hunan 410013
People's Republic of China

Tel: +86-13636523212
Email: sales@aemproduct.com
Web: www.aemproduct.com

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Material Safety Data Sheet

Identity: Aluminum Oxide Sputtering Target

Formula: Al₂O₃

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

CAS #	OSHA PEL	ACGIH TLV	%
1344-28-1	15 mg/m ³	10 mg/m ³	100.0

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 2977°C

Vapor Pressure (vs. air or mmHg): 1 mm at 2158°C

Melting Point: 2050°C

Density: NA

Evaporation Rate: NA

Flash Point: N/A

Solubility in water: Insoluble, soluble in NaOH

Specific Gravity: (H₂O=1): 4

Appearance and odor:

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used:

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:

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (stability): None



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Incompatibility:

Chlorine trifluoride, ethylene oxide, halocarbons, oxygen difluoride, sodium nitrate and vinyl acetate.

Hazardous Decomposition or Byproducts: Aluminum, hydrochloric acid and phosgene

Hazardous Polymerization: will not occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation? No Skin? No Eyes? No Ingestion? No 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 reactive properties. Inhalation of fine aluminum oxide particles is associated with Shaver's disease (Sax, Dangerous Properties of Industrial Materials, eight edition)

Signs and Symptoms of Overexposure:

Inhalation: May cause cough, mucous production and shortness of breath.

Ingestion: No acute or chronic health effects recorded

Skin: No acute or chronic health effects recorded

Eye: May cause redness, itching, burning and watering

Health Hazards (Acute and Chronic):

Inhalation:

Acute: Toxic by inhalation of dust. Inhalation of finely divided may cause coughing, mucous production and shortness of breath

Chronic: May cause lung damage affecting breathing capacity

Skin: No acute or chronic health effects have been recorded

Eye:

Acute: May cause irritation from dust

Chronic: No chronic health effects have been recorded

Target Organs:

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



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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.

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 gloves, safety glasses, clothes to prevent contact.

Ventilation:

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