



## Material Safety Data Sheet

**Identity:** Aluminum

**Formula:** Al

### 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>
7429-90-5	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	0.0-100.0%

### SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

**Physical States:** Solid

**Boiling Point:** 2519.00°C

**Vapor Pressure (vs. air or mm Hg):** 1 mm at 1284.0 C

**Melting Point:** 660.4°C

**Specific Gravity:** (H<sub>2</sub>O=1): 2.70 g/cm<sup>3</sup>

**Evaporation Rate:** N/A

**Flash Point:** N/A

**Solubility in Water:** Insoluble

**Appearance and odor:** Silver-white, metallic powder and pieces with no odor

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

**Method Used:** Flammable solid

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

UEL: N/A

**Extinguishing Media:** Use class D or other extinguishing agent for metal fires.

#### **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:**

Powders may react violently with hydrochloric acid, halogens, interhalogens, chloroform, chlorometane, and will spontaneously ignite with CS<sub>2</sub> vapors. Water and burning finely divided aluminum react violently forming hydrogen gas and aluminum oxide. Aluminum particles will burn at a very high temperature as a mass of material or be



potentially explosive if loosened and dispersed in air.

## SECTION V - REACTIVITY DATA

**Stability:** Stable

**Conditions to Avoid (instability):** None

**Incompatibility:** Water, oxidizing agents, acid, acid chlorates, harsh alkalis and halogenated compounds.

**Hazardous Decomposition or Byproducts:** Hydrogen gas.

**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

To the best of our knowledge the chemical, physical and toxicological properties of aluminum have not been thoroughly investigated and recorded.

Aluminum compounds have many commercial uses and are commonly found in industry. Many of these materials are active chemically and this 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)

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

**Inhalation:** May cause a red, dry, throat and coughing.

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

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

**Eye:** May cause red, itching and watering.

### ***Inhalation:***

**Acute:** Inhalation of dust or powder may cause an irritation to respiratory system.

**Chronic:** Inhalation of finely divided powder may cause pulmonary fibrosis.

### ***Ingestion:***

**Acute:** No acute health effects recorded.

**Chronic:** May be implicated in Alzheimer's disease.

### ***Skin:***

**Acute:** No acute health effects recorded.

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



**Eye:**

**Acute:** Dust and powder may cause abrasive irritation.

**Target Organs:** No target organs 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 if symptoms persist.

**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.

***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



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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