


ELECTRONIC SPACE PRODUCTS INTERNATIONAL

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MATERIAL SAFETY DATA SHEET
I PRODUCT IDENTIFICATION

Trade Name:	Aluminum Oxide	Formula:	Al ₂ O ₃
Chemical Family:	Metal oxide	CAS #:	1344-28-1
Synonyms:	Alumina		

II HAZARDOUS INGREDIENTS

Hazardous Component	%	OSHA/PEL	ACGIH/TLV	Sec. 302	Sec.
Aluminum Oxide	0-100	5 mg/m ³	10		

HMIS Ratings: Health: 1 **Flammability:** 0 **Reactivity:** 0 **Protective Equipment:** E: glasses, gloves, dust respirator

III PHYSICAL DATA

Boiling Point:	2977 °C	Melting Point:	2050 °C
Specific Gravity:	4 g/cc	Vapor Density:	N/A
% Volatiles:	N/E or N/A	Solubility in H₂O:	Insoluble
Appearance and Odor:	White powder or tablets, no odor		

IV FIRE AND EXPLOSION HAZARDS DATA

Flash Point: N/E or N/A

Method Used: Non-combustible

Explosive Limits: Upper: N/A Lower: N/A

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

Special Firefighting 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: Aluminum oxide may have an exothermic reaction, above 200 °C, with halocarbon vapors and may produce toxic hydrochloric acid and phosgene.

V HEALTH HAZARD INFORMATION

Effects of Exposure:

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)

Route(s) of Entry: Inhalation.

Target Organs: May affect the lungs

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

Acute Effects:

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

Ingestion: No acute health effects recorded.

Skin: No acute health effects recorded.

Eye: Dust may cause eye irritation.

Chronic Effects: Inhalation: Inhalation of finely divided dust may cause lung damage affecting breathing capacity. No other chronic health effects recorded.

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.

EYES: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention.

VI REACTIVITY DATA

Stability: Stable

Conditions to Avoid: Not applicable

Incompatibility (Material to Avoid): Chlorine trifluoride, ethylene oxide, halocarbons, oxygen difluoride, sodium nitrate and vinyl acetate.

Hazardous Decomposition Products: Aluminum, hydrochloric acid and phosgene.

Hazardous Polymerization: Will not occur

VII SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled: Wear appropriate respiratory and protective equipment specified in section VIII. 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

Respiratory Protection: NIOSH/MSHA approved dust respirator if ventilation controls are not possible or are inadequate.

Ventilation: Use local exhaust to maintain concentration at or below the PEL. General exhaust is not recommended.

Protective Gloves: Rubber gloves

Eye Protection: Safety glasses

Other Protective Clothing or Equipment: Protective gear not necessary for aluminum oxide.

IX SPECIAL PRECAUTIONS

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

Other Precautions: None

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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