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# MATERIAL SAFETY DATA SHEET

Chemical Family:	Aluminum Metal seler	Selenide nide		Formula: CAS #:	Al <sub>2</sub> Se <sub>3</sub> 1302-82-5	
II HAZARDOUS I	NGREDIE	NTS				
<u>Hazardous Components</u>	%	OSHA/PEL	ACGIH/TLV	Sec. 302	Sec. 304	Sec. 313
Aluminum Selenide	0-100	$0.2 \text{ mg} (\text{Se})/\text{m}^3$	$0.2 \text{ mg} (\text{Se})/\text{m}^3$	No	Yes 1 lb	Yes

Boiling Point:	N/E or N/A	Melting Point:	N/E or N/A
Vapor Density:	N/A	Specific Gravity (H <sub>2</sub> O=1):	3.437 at 15 °C
Solubility in H <sub>2</sub> O:	Decomposes to $Al_2O_3$ and $SeO_2$	Vapor Pressure:	N/E
Appearance and Odor:	Light brown pieces, strong garlic or fishy odor.	% Volatiles by Weight:	N/E or N/A

# IV FIRE AND EXPLOSION HAZARDS DATA

Flash Point: N/A Explosive Limits: Upper: N/A Lower: N/A Method Used: Non-flammable

**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: When heated to decomposition, aluminum selenide may emit toxic fumes of selenium.

## V HEALTH HAZARD DATA

**Effects of Exposure**: (To the best of our knowledge the chemical, physical and toxicological properties of aluminum selenide 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 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).

Selenium compounds are poison by inhalation and intravenous routes. Some selenium compounds are experimental carcinogens. Long-term exposure may be a cause of amyotrophic lateral sclerosis in humans, just as it may cause "blind staggers" in cattle. Elemental selenium has low acute systemic toxicity, but dust or fumes can cause serious irritation of the respiratory tract. Inorganic selenium compounds can cause dermatitis. Garlic odor of breath is a common symptom. Pallor, nervousness, depression, digestive disturbances and death have been reported if chronic exposure. (Sax, Dangerous Properties of Industrial Materials, eighth edition).

## Acute Effects:

Inhalation: May cause irritation to the respiratory tract and acute selenium poisoning.Ingestion: May cause gastrointestinal disturbances.Skin: May cause irritation.Eye: May cause irritation.

#### Chronic Effects:

Inhalation: May cause chronic selenium poisoning. Continued intoxication may cause loss of nails and hair, hemolytic anemia, and kidney, liver and spleen damage. Ingestion: May cause chronic selenium toxicity and be implicated in Alzheimer's disease. Skin: May cause dermatitis.

Eye: May cause visual disturbances and blurred vision.

**Routes of Entry**: Inhalation, ingestion, skin, eyes. **Medical Conditions Generally Aggravated by Exposure**: Pre-existing respiratory and skin disorders.

Target Organs:Upper respiratory system, eyes, skin, liver, kidneys and blood.Carcinogenicity:NTP:NoIARC:NoOSHA:No

#### **EMERGENCY AND FIRST AID PROCEDURES:**

**INHALATION**: Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention. **INGESTION**: Give victim fluids and DO NOT induce vomiting; seek medical attention.

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

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

#### VI REACTIVITY DATA

Stability: Unstable

**Conditions to Avoid**: Aluminum selenide is unstable in air. **Incompatibility (Material to Avoid)**: Strong acids and air.

Hazardous Decomposition Products:  $H_2Se$ ,  $SeO_2$  and  $Al_2O_3$ . 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. 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 (Specify Type)**: NIOSH - approved dust, mist, vapor respirator. **Ventilation**: Prevent contact with air. Handle in an enclosed environment such as a glove box in an inert atmosphere such as argon.

**Protective Gloves**: Rubber gloves **Eye Protection**: Safety goggles Other Protective Clothing or Equipment: Protective gear suitable to prevent contamination.

# IX SPECIAL PRECAUTIONS

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

**Other Precautions**: Aluminum selenide is unstable in air. Handle and store in a controlled environment and in an inert gas such as argon.

**Work Practices**: Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Handle in a controlled, inert atmosphere. Minimize exposure by using an enclosing process. Use good housekeeping and sanitation practices. Do not use tobacco or food in the work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

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 Date: January 2003