

Material Safety Data Sheet

Identity: Selenium

Formula: Se

SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM 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: 78.96

CAS #	OSHA PEL	ACGIH TLV	%
7782-49-2	N/A	0.2mg/m ³	100

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 685.0 °C

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

Melting Point: 217.0 °C

Density: 4.28g/cm³

Specific Heat (at 25 °C): 0.084cal/g

Flash Point: N/A:

Solubility in water: Insoluble

Appearance and odor: Grey to black metal, odorless

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Explosive Limits: LEL: N/A

UEL: N/A

Extinguishing Media:

DO NOT USE WATER Use dry chemical extinguishing agents, sand or carbon dioxide

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: Fine dust will burn if ignited

SECTION V - REACTIVITY DATA

Stability: Stable*Conditions to Avoid (stability):* Incompatibles*Incompatibility:* Reacts to form explosive products with metal amides. Can react with barium carbide, bromine pentafluoride, calcium carbide, chlorates, chlorine trifluoride, fluorine, oxygen, potassium, and uranium*Hazardous Decomposition or Byproducts:* Selenium oxide, hydrogen selenide*Hazardous Polymerization:* Will not occur

Conditions to avoid (hazardous polymerization): Incompatibles plus displacing metals in acidic solutions

SECTION VI - HEALTH HAZARD DATA

Health Hazards (Acute and Chronic):

Inhalation:

Acute: May cause irritation and metallic taste

Chronic: May cause amyotrophic lateral sclerosis, bronchial irritation, GI distress, garlic odor on breath, pallor, irritability, excessive fatigue, loss of fingernails and hair, pulmonary edema, anemia and weight loss.

Ingestion:

Acute: May cause gastrointestinal irritation even though selenium is an essential nutritional element

Chronic: May cause effects similar to chronic inhalation

Skin:

Acute: May cause irritation

Chronic: May cause dermatitis in sensitive individuals

Eye: May cause irritation, watering and redness

Carcinogenicity: NTP? No

IARC Monographs? No

OSHA Regulated? No

Medical Conditions Aggravated by Exposure: Pre-existing allergies

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, **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 eating or smoking. Do not blow dust off clothing or skin with compressed air.
