

MATERIAL SAFETY DATA SHEET

I PRODUCT IDENTIFICATION

Trade Name: Manganese Selenide	Chemical Family: Bimetallic compound
Synonyms: None Known	Formula: MnSe ₂
CAS #: 12299-98-8	

II HAZARDOUS INGREDIENTS

Manganese Selenide %: 100 **PEL:** 0.2 mg Se/m³; 5 mg Mn/m³ -ceiling **TLV:** 0.2 mg Se/m³

III PHYSICAL DATA

Boiling Point: No Data	Freezing/Melting Point: No Data
Specific Gravity (H₂O=1): 5.55	Vapor Pressure: N/A
Vapor Density (air=1): N/A	% Volatiles by Weight: No Data
Solubility in H₂O: Insoluble	Evaporation Rate: N/A
Appearance and Odor: Grey powder, odorless	

IV FIRE AND EXPLOSION HAZARDS DATA

Flash Point (Method used): N/A **Flammable Limits: Upper:** N/A **Lower:** N/A
Extinguishing Media: If involved in a fire, use dry chemical extinguishing agents, dry sand, or dry ground dolomite.

Special Fire Fighting Procedures: No special firefighting procedures. Wear NIOSH/MSHA approved self contained breathing apparatus, flame and chemical resistant clothing; hats; boots and gloves. If without risk, remove material from fire area.

V HEALTH HAZARD INFORMATION

Medical Conditions Generally Aggravated by Exposure: None Known **Most Likely Routes of Entry:** Ingestion

Effects of Over Exposure:

Acute Effects:

Ingestion: May cause abdominal pain and nausea. Ingestion may cause systemic effects similar to those of chronic inhalation.

Skin Contact: May cause irritation.

Eye Contact: May cause irritation.

Inhalation: Inhalation of dust or fumes may cause irritation, metallic taste and garlic odor to the breath. High concentrations may cause shortness of breath, bronchospasms, chills, fever, headache and delayed pulmonary edema. May cause systemic effects similar to those of chronic inhalation.

Chronic Effects:

Ingestion: May cause systemic effects similar to those of chronic inhalation.

Skin Contact: Repeated skin contact may cause an allergic-type dermatitis.

Eye Contact: None Known

Inhalation: Chronic exposure to selenium may cause amyotrophic lateral sclerosis, bronchial irritation, GI distress, vasopharyngeal irritation, garlic odor on breath and sweat, metallic taste, pallor, irritability, excessive fatigue, loss of fingernails and hair, pulmonary edema, anemia and weight loss. May cause chronic manganese poisoning which involved impairment of the central nervous system. Symptoms include sluggishness, sleepiness and weakness in the legs. Advanced cases have shown fixed facial expressions, emotional disturbances, spastic gait and falling.

Other: Selenium has been reported to cause damage to the liver and kidneys and teratogenic and mutagenic effects in laboratory animals. Chronic manganese poisoning may develop after as little as three months of heavy exposure but usually cases develop after one to three years of exposure.

EMERGENCY AND FIRST AID PROCEDURES:

INGESTION: No data available but one should obtain medical attention.

SKIN: Remove contaminated clothing, flood skin with large amounts of water.

EYE: Immediately flush eyes, including under eyelids, with large amounts of water for at least 15 minutes. Call a physician.

INHALATION: No specific information available, one should obtain medical attention.

VI REACTIVITY DATA

Stability: Stable

Incompatibility (Material to Avoid): Strong Acids, strong oxidizing agents, strong bases.

Hazardous Polymerization: Will not occur

Hazardous Decomposition Products: Oxides of selenium may be evolved on contact with acids.

Conditions to Avoid: Thermal decomposition.

VII SPILL OR LEAK PROCEDURES

RCRA Code: D010

TSCA Registered: Yes

Steps to Be Taken in Case Material Is Released or Spilled: Wear suitable respiratory protection and protective clothing. Cover spill with dry sand or vermiculite. Mix well and carefully transfer to a container.

Waste Disposal Method: Consult Local, State and Federal regulations for proper disposal of manganese.

VIII SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type): NIOSH/MSHA approved, respirator for hazardous dusts and mists or self-contained breathing apparatus.

Ventilation: Laboratory Fume Hood

Protective Gloves: Rubber

Eye Protection: ANSI approved safety goggles.

IX SPECIAL PRECAUTIONS

Other Handling and Storage Conditions: Keep container tightly closed. Store in a cool, dry, well-ventilated area. Wash thoroughly after use. Wear a lab coat and apron, flame and chemical resistant coveralls, eyewash capable of sustained flushing, safety drench shower and hygienic facilities for washing. Per 49CFR 172.101

Warning: May cause CNS effects, irritation

This product contains a selenium compound and a zinc compound which are subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and 40CFR 372.

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product nor in conformance with this MSDS, or in combination with any other product or process, is the responsibility of the user.

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