

Plasmaterials, Inc.
 2268 Research Drive
 Livermore, CA 94550
 Ph: (925) 447-4030 Fx: (925) 447-4031
<http://plasmaterials.com>

MATERIAL SAFETY DATA SHEET

Section 1- PRODUCT IDENTIFICATION

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|----------------------------|---|
| COMPOSITION CdSe | PRODUCT NAME Cadmium Selenide |
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Section 2- HAZARDOUS INGREDIENTS

Note: Products under normal conditions do not represent an inhalation, ingestion or contact health hazard.

| MATERIAL OR COMPONENT | CAS NUMBER | WT% | EXPOSURE LIMITS | |
|-------------------------|------------------|-------------|-------------------------------|--------------------------------|
| | | | OSHA PEL (Mg/M3) | ACGIH TLV(MG/M3) |
| Cadmium Selenide | 1306-24-7 | 100% | 5ug(Cd)/ m³ | .05mg(Cd)/m³ |

Section 3- PHYSICAL DATA

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|--|---|
| MATERIAL IS (AT NORMAL CONDITIONS) <input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Gas <input type="checkbox"/> Other | APPEARANCE AND ODOR Brown to red brown powder. No odor. |
| MELTING POINT (BASE METAL) N/A | SPECIFIC GRAVITY 5.81at 4.0C |

Section 4- FIRE AND EXPLOSION

| | | | |
|---|--|--------------------|--------------------|
| Flash Point (Method Used) N/A | Flammable Limits Non-Flammable | LEL N.A. | UEL N.A. |
|---|--|--------------------|--------------------|

EXTINGUISHING MEDIA

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

SPECIAL FIRED FIGHTING PROCEDURES

Wear full face, self-contained breathing apparatus with full protective clothing. Isolate run-off to prevent pollution.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Heated to decomposition may emit toxic fumes of cadmium selenide and oxides of cadmium and selenium. Material may react exothermically on contact with water and moisture. Decomposes in air or acids. On contact with moisture, hydrogen selenide may be evolved.

Section 5- REACTIVITY DATA

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|---|--|
| STABILITY Stable | INCOMPATIBILITY (MATERIALS TO AVOID) Strong oxidizing agents & acids |
| CONDITIONS TO AVOID None | |
| HAZARDOUS DECOMPOSITION PRODUCTS Airborne cadmium fumes, cadmium oxide, hydrogen selenide and hydrogen gas. | |

Section 6- HEALTH HAZARD GUIDE

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|---|
| MAJOR EXPOSURE HAZARD <input type="checkbox"/> Inhalation <input type="checkbox"/> Skin <input type="checkbox"/> Skin Absorption <input type="checkbox"/> Eye Contact <input type="checkbox"/> Ingestion |
| EFFECTS OF OVEREXPOSURE <p>INHALATION: Acute: May cause irritation of the upper respiratory system, vertigo, constriction of throat, metallic taste and cough, nervousness, depression, chest pain, flu-like symptoms, pulmonary edema and acute selenosis. Severe: May cause pulmonary fibrosis/hypertrophy of bronchial vessels and liver damage. Chronic: May cause irreversible lung damage pulmonary fibrosis, damage to olfactory nerve and chronic selenosis. All routes of entry may cause kidney damage, osteoporosis, spontaneous fractures, hemolytic and iron deficiency, anemia, weight loss, irritability, cardiovascular effects and prostatic and respiratory cancers.</p> <p>INGESTION: Acute: May cause irritation to the mouth, throat and digestive system increased salivation burning sensation and cramps in the stomach, nausea, headache, vomiting, weakness, dizziness, diarrhea, shock, convulsion, coma and death. Chronic: May cause irreversible renal tubular dysfunction, functional changes in the liver, pancreas and adrenal glands.</p> <p>SKIN CONTACT: Acute: May cause local irritation and possible burns. Chronic: may cause dermatitis.</p> <p>EYE CONTACT: Acute: May cause redness, pain and irritation. Chronic: May cause conjunctivitis and blurred vision.</p> <p>Cadmium Compounds are known carcinogens producing lung tumors. Poison by ingestion. Inhalation from dust or fumes affects the respiratory tract and kidneys. Brief exposure to high concentrations may result in pulmonary edema and death. Fatal concentrations may be breathed without sufficient discomfort to warn a worker to leave the area. Cadmium selenide can cause metal fume fever. 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 systematic toxicity, but dust or fumes can cause serious irritation of the respiratory tract. Inorganic selenium compounds can cause dermatitis.</p> |
| EMERGENCY & FIRST AID PROCEDURES <p>INHALATION: Remove from exposed area to fresh air immediately; If conscious, encourage victim to blow nose, cough and then spit out the mucous and saliva. Keep warm and quiet. Give oxygen if breathing is difficult. Seek medical attention.</p> <p>INGESTION: Seek medical attention immediately.</p> <p>SKIN CONTACT: Remove contaminated clothing; brush material off skin. Wash affected area with soap or mild detergent and large amounts of water</p> <p>EYE CONTACT: Flush eyes with lukewarm water lifting up the upper and lower lids for at least fifteen minutes. Seek medical attention.</p> |

Section 7- SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCUDRES

Wear appropriate clothing and respiratory equipment. Isolate the area where the spill occurred and provide ventilation. Vacuum up the spill using a high efficiently particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

WASTE DISPOSAL METHODS

Observe all federal, state and local regulations when storing or disposing.

Section 8- SPECIAL PROTECTION

RESPIRATORY:

Select according to OSHA29CFR1910.1027(g)(2)(i)Table 2

VENTILATION

Maintain concentration al or below PEL, TLV.

EYE PROTECTION & PROTECTIVE CLOTHING

Vented goggles and or face shield. Protective gear suitable to prevent contamination.

Section 9- SPECIAL PRECAUTIONS

Some of the chemicals listed here are experimental substances, which may be toxic, as defined by various governmental regulations. In accordance with Environmental Protection Agency regulations and the Toxic Substance Control Act (TSCA), these materials should only be handled by, or under the direct supervision of a "technically qualified individual", as defined in 40 CFR710.2(aa)

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