Zinc selenide, powder and pieces
Manufacturer MSDS Number: ZnSe

SECTION 1 : Chemical Product and Company Identification

MSDS Name: Zinc selenide, powder and pieces
Manufacturer Name: Kurt J. Lesker Company
Address:
P.O. Box 10
1925 Route 51
Clairton, PA 15025

For emergencies in the US, call CHEMTREC: 800–424–9300
Other Phone: US National Poison Hotline: (800)222–1222
Manufacturer MSDS Creation Date:
06/22/2006
Manufacturer MSDS Revision Date:
06/30/2008
Synonyms:
Zinc selenide; zinc monoselenide
Chemical Family: Metal selenide
Chemical Formula: ZnSe
Molecular Weight: 144.33

DOT HAZARD LABEL
No data.

Product Codes:
ZnSe

SECTION 2 : Hazardous Ingredients/Identity Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS#</th>
<th>% Weight</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc selenide</td>
<td>1315−09−9</td>
<td>0.0−100.0 %</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 3 : Physical And Chemical Characteristics

Physical State/Appearance:
Reddish−yellow transparent powder and pieces, no odor.

Physical State:
[ ] Gas , [ ] Liquid , [ X ] Solid

pH:
No data.

Vapor Pressure:
No data. (VS. AIR OR MM HG)

Vapor Density: 
No data. (VS. AIR = 1)

**Boiling Point:**
N.A.

**Melting Point:**
1520.00 deg C (2768.0 deg F) to 1525.00 deg C (2777.0 deg F)

**Solubility In Water:**
insoluble

**Specific Gravity:**
5.27 g/cc (WATER = 1)

**Density:**
No data.

**Evaporation Point:**
No data. (VS BUTYL ACETATE=1)

**Percent Volatile:**
N.A.

**FlashPoint:**
N.A.

**Upper Flammable Explosive Limit:**
NA

**Lower Flammable Explosive Limit:**
NA

### SECTION 4 : Fire And Explosion Hazards

**Flash Point:**
N.A.

**Flash Point Method:**
No data.

**Upper Flammable or Explosive Limit:** NA

**Lower Flammable or Explosive Limit:** NA

**Extinguishing Media:**
Not applicable. Use suitable extinguishing media for surrounding materials and type of fire.

**Fire Fighting Instructions:**
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 Hazards:**
When heated to decomposition, zinc selenide may emit toxic fumes of selenium and oxides of zinc. On contact with strong acids, it may emit hydrogen selenide.

### SECTION 5 : Health Hazards

**Zinc selenide:**

**Route of Exposure:**
Inhalation? Yes , Skin? Yes , Eyes? Yes , Ingestion? Yes , Other: N

**Potential Health Effects:**

**Eye Contact:**
May cause irritation.

**Skin Contact:**
May cause irritation.

**Inhalation:**
DANGER—POISON. May cause respiratory tract irritation with nasopharyngitis and laryngitis, brass chills and acute selenium poisoning.
Ingestion:

DANGER−POISON. May cause gastrointestinal disturbances.

Chronic Eye Contact:

May cause visual disturbances and blurred vision.

Chronic Skin Contact:

May cause dermatitis.

Chronic Inhalation:

May cause chronic selenium poisoning. Continued intoxication may cause loss of nails and hair, hemolytic anemia, and kidney, liver and spleen damage.

Chronic Ingestion:

May cause chronic selenium toxicity.

Carcinogenicity:

NTP? No , IARC Monographs? No , OSHA Regulated? No

Target Organs:

Upper respiratory system, eyes, skin, liver, kidneys and blood.

Signs/Symptoms:

INHALATION: May cause a sweet taste, throat dryness, coughing, weakness, generalized aches, chills, fever, nausea and vomiting. Acute selenium poisoning may cause: nervousness, fever, vomiting, somnolence, drop in blood pressure, labored breathing and toxic action on the nervous system may lead to respiratory failure. Chronic selenium poisoning may cause: depression, marked pallor, coated tongue, gastrointestinal disorders, garlic odor of the breath. INGESTION: Chronic selenium toxicity may cause: alkali disease, loss of vitality, lameness, atrophy, cirrhosis of the liver, degeneration and necrosis of the myocardium. SKIN: May cause redness, itching and inflammation. EYE: May cause redness, itching and watering.

Other Potential Health Effects:

CARCINOGENICITY/OTHER INFORMATION: No data available.

Aggravation of Pre−Existing Conditions:

Pre−existing respiratory and skin disorders.

See "Section II" LD 50/LC 50: No toxicity data recorded.

SECTION 6 : Emergency And First Aid Procedures

Physical Health Hazard:

HEALTH HAZARDS (ACUTE AND CHRONIC): To the best of our knowledge the chemical, physical and toxicological properties of zinc selenide have been thoroughly investigated and recorded. Zinc compounds have variable toxicity, but generally are of low toxicity. Zinc is not inherently a toxic element. However, when heated, it evolves a fume of zinc oxide which, when inhaled fresh, can cause a disease known as "brass founders’"ague," or "brass chills". Zinc oxide dust which is not freshly formed is virtually innocuous. There is no cumulative effect from the inhalation of zinc fumes. (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 in cases of chronic exposure. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Eye Contact:

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

Skin Contact:

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

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.

Note to Physicians:

No data available.

SECTION 7 : Reactivity Data

Chemical Stability:

Unstable [ ] Stable [ X ]
Conditions to Avoid:
CONDITIONS TO AVOID − INSTABILITY: None; CONDITIONS TO AVOID − HAZARDOUS POLYMERIZATION: None

Incompatibilities with Other Materials:
Strong acids and bases.

Hazardous Polymerization:
Will occur [ ] Will not occur [X]

Hazardous Decomposition Products:
Fumes of selenium, hydrogen selenide and oxides of zinc

SECTION 8: Precautions For Safe Handling

Spill Cleanup Measures:
Wear appropriate respiratory and protective equipment specified in section VIII−control measures. 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.

Other Precautions:
None

HAZARD LABEL INFORMATION:
Store in cool, dry area Store in tightly sealed container Wash thoroughly after handling

Handling:
None

Storage:
None

Hygiene Practices:
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 and smoking. Do not blow dust off clothing or skin with compressed air.

Waste Disposal:
Dispose of in accordance with local, state and federal regulations.

SECTION 9: Control Measures

Ventilation System:
Local exhaust ventilation may be necessary to control any air contaminants to within their PELs or TLVs during the use of this product. Handle in a controlled environment Mechanical not recommended

Hand Protection Description:
Rubber gloves

Eye/Face Protection:
Safety glasses

Protective Clothing/Body Protection:
Protective gear suitable to prevent contamination

Respiratory Protection:
NIOSH approved respirator

NIOSH approved respirator Impervious gloves Safety glasses Clothes to prevent skin contact

Ingredient Guidelines
Ingredient: Zinc selenide

Guideline Information:
ACGIH TLV: .2 mg(Se)/m3; OSHA PEL: .2 mg(Se)/m3; OTHER LIMITS: NE

SECTION 10: Other Information

Zinc selenide:
Section 302:
No

Section 304:
Yes 1 LB**

Section 313 Toxic Release Form:
Yes

HMIS:
Health Hazard: 3
Fire Hazard: 0
Reactivity: 0
Personal Protection: H

MSDS Revision Date:
06/30/2008

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Comment:
OTHER HAZARD RATINGS: Health: 3 Flammability: 0 Reactivity: 0 Special Hazard: NA Minimal: 0 Slight: 1 Moderate: 2 Serious: 3 Extreme: 4

Abbreviations used
NA=Not Applicable NE: Not Established

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