



MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Zinc Selenide

SECTION 1 – COMPOSITION AND INFORMATION ON INGREDIENTS

| COMPONENT | CAS-NO | CONCENTRATION |
|--|-----------|---------------|
| Selenium compounds except cadmium sulphoselenide | 1315-09-9 | 100.0% |

SECTION 2 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Appearance:

Form: solid
Colour: Reddish-yellow
Odour: Odorless

HAZARD SUMMARY: **DANGER!**
CONTACT WITH ACIDS LIBERATES TOXIC GAS.
TOXIC BY INHALATION AND IF SWALLED.
POWDER MAY FORM EXPLOSIVE MIXTURES WITH AIR.

POTENTIAL HEALTH EFFECTS:

Eyes: Like any foreign body, particles can use mechanical irritation.

Skin: irritation

Ingestion: May be fatal if swallowed.

Inhalation: nausea

Inhalation of dust can cause the following: headache, irritation of nose, throat, and lungs.

Primary routes of entry: Eye contact
 Skin contact
 Inhalation

| | | |
|---|------|------------------|
| Selenium compounds except cadmium Sulphoselenide | IRIS | Not classifiable |
|---|------|------------------|

| | | |
|---|------|---|
| Selenium compounds except cadmium Sulphoselenide | IARC | Classification not possible from current data |
| Selenium compounds except cadmium sulphoselenide | IRIS | Not classifiable |

SECTION 3 – FIRST AID MEASURES

Inhalation: If unconscious place in recovery position and seek medical advice. Keep patient warm and at rest. Call a physician or Poison Control Centre immediately. Give artificial respiration if breathing has stopped. Move to fresh air.

Skin contact: Take off contaminated clothing and shoes immediately. After contact with skin, wash immediately with plenty of water. Wash contaminated clothing before reuse.

Eye contact: Immediately flush eye(s) with plenty of water.

Ingestion: If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. Rinse mouth.

SECTION 4 – FIRE-FIGHTING MEASURES

Flash Point: not applicable
Lower explosion limit: not applicable
Upper explosion limit: not applicable
Thermal decomposition: During a fire, irritating and highly toxic gases and/or fumes may be generated during combustion or decomposition.

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards during fire fighting: Do not allow run-off from fire fighting to enter drains or water courses.

Special protective equipment for fire-fighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 5 – ACCIDENTAL RELEASE MEASURES

Personal precautions:
Wear respiratory protection.
Use personal protective equipment.
Evacuate personnel to safe areas.

MATERIAL IS TOXIC. If exposed to material during clean-up operations, IMMEDIATELY remove all contaminated clothing and wash exposed skin areas with soap and water. See section 3, First Aid and Measures, for further information.

Appropriate protective equipment must be worn when handling a spill of this material. See Section 7, Exposure Controls/ Personal Protection, for recommendations.

Environmental precautions:

If the product contaminates rivers and lakes or drains inform respective authorities.

Do not flush into surface water or sanitary sewer system.

NOTE: Spills on porous surfaces can contaminate groundwater.

Should not be released into the environment.

Do not allow material to contaminate ground water system.

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up:

Clean contaminated surface thoroughly.

Clean up promptly by sweeping or vacuum.

Additional advice: See section 12, Disposal Considerations, for information regarding the disposal of contained spills.

SECTION 6 –HANDLING AND STORAGE

Handling:

Smoking, eating and drinking should be prohibited in the application area. Use only in an area equipped with a safer shower. Use only in area provided with appropriate exhaust ventilation. For personal protection see section 7. Plan first aid action before beginning work with this product. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after container is emptied. Wear personal protective equipment. This material is TOXIC. Avoid formation of respirable particles. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid exceeding of the given occupational exposure limits (see section 7). Provide sufficient air exchange and/or exhaust in work rooms. **Advice on protection against fire and explosion:** Normal measures of preventive fire protection.

Storage:

Storage conditions: Keep container tightly closed in a dry and well-ventilated place. Store in a place accessible by authorized persons only.

Other data: No decomposition if stored and applied as directed.

SECTION 7 – EXPOSURE CONTROLS/ PERSONAL PROTECTION

Exposure limit(s):

Exposure limits are listed bellow, if they exist.

| Component | Regulation | Type of listing | Value |
|--|------------|-----------------|-----------------------|
| Selenium compounds except cadmium sulphoselenide | ACGIH | TWA | 0.2 mg/m ³ |
| | OSHA_TRANS | PEL | 0.2 mg/m ³ |
| | Z1A | TWA | 0.2 mg/m ³ |

EYE PROTECTION: Use chemical splash goggles (ANSI A87.1 or approved equivalent).

HAND PROTECTION: Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Chemical-resistant gloves should be worn whenever this material is handled. Please observe the instructions regarding permeability and breakthrough. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact.

SKIN AND BODY PROTECTION: Safety shoes complete suit protecting against chemicals. Choose body protection in relation to its type, to the concentration and a work-place.

RESPIRATORY PROTECTION: None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. When dusty conditions are encountered, wear a properly fitted NIOSH approved (or equivalent) half-mask, air-purifying respirator. A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use.

HYGIENE MEASURES: Keep working clothes separately. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. When using do not eat or drink. When using do not smoke.

PROTECTIVE MEASURES: Do not breathe dust. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

ENGINEERING MEASURES: None required under normal operating conditions.

SECTION 8 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance

| | |
|--------|----------------|
| Form | solid |
| Colour | Reddish-yellow |
| Odour | odorless |

pH not applicable

Flash point not applicable

Lower explosion limit not applicable

Upper explosion limit not applicable

Vapour pressure not determined

Relative vapour density not available

Water solubility insoluble

Relative density 5.30

Evaporation rate not available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 9 – STABILITY AND REACTIVITY

| | |
|----------------------------|---|
| Conditions to avoid | Static discharge |
| Materials to avoid | Incompatible with strong acids and oxidizing agents |
| Polymerization | Product will not undergo polymerization |

SECTION 10 – TOXICOLOGICAL INFORMATION

No toxicity data are available for this material.

SECTION 11 – ECOLOGICAL INFORMATION

Aquatic toxicity is unlikely due to low solubility.

SECTION 12 – DISPOSAL CONSIDERATIONS

Environmental precautions: If the product contaminates rivers and lakes or drains inform respective authorities.

Do not flush into surface water or sanitary sewer system.

NOTE: Spills on porous surfaces can contaminate groundwater.

Should not be released into the environment.

Do not allow material to contaminate ground water system.

Prevent further leakage or spillage if safe to do so.

Disposal:

Waste Classification: When a decision is made to discard this material as supplied, it does not meet RCRA's characteristic definition of ignitability, corrosivity, and is not listed in 40 CFR 261.33. The toxicity characteristic (TC), however, has been evaluated by the Toxicity Characteristic Leaching Procedure (TCLP). For disposal, incinerate or landfill at a permitted facility in accordance with local, state, and federal regulations (see 40 CFR Part 268).

Contaminated packaging: Dispose of as unused product.

SECTION 13 – TRANSPORT INFORMATION

DOT Not regulated for transport

IMO/IMDG Not regulated (Not dangerous for transport)

Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations.

SECTION 14 – REGULATORY INFORMATION

Workplace Classification:

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

This product is a 'controlled product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Chronic Health Hazard

SARA TITLE III: Section 313 Information (40CFR372)

SARA Title III Components: Selenium compounds except cadmium 1315-09-9
sulphoselenide

CERCLA Information (40CFR302.4)

CERCLA Components: Selenium compounds except 1315-09-9 10lbs RQ
cadmium sulphoselenide

US Toxic Substances Control Act (TSCA): All components of this product are in compliance with the inventory listing requirements of the US Toxic Control Act (TSCA) Chemical Substance Inventory.

California (Proposition 65)

This product contains a component or components known to the state of California to cause cancer.

SECTION 15 – OTHER INFORMATION

Hazard Rating:

| | Health | Fire | Reactivity |
|-------------|-----------|----------|------------|
| HMIS | 1* | 0 | 0 |

Legend

| | |
|-------|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| BAC | Butyl acetate |
| OSHA | Occupational Safety and Health Administration |
| PEL | Permissible Exposure Limit |
| STEL | Short Term Exposure Limit (STEL) |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average (TWA) |
| I | Bar denotes a revision from prior MSDS. |

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.