

# SAFETY DATA SHEET on Selenium

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SDS No. MH10-04-021

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## 1. Chemical Product

SDS Name : Selenium  
SDS No. : MH10-04-021

## 2. Composition, Information on ingredients

CAS# : 7782-49-2  
EINECS# : 231-957-4  
Content : Selenium 99.999%  
Chemical formula: : Se

## 3. Hazardous Identification

Appearance : Small blue-black metallic shot

**Warning! Causes severe irritation to eyes skin and respiratory tract. Harmful if swallowed or inhaled. Affects liver, kidneys, blood, spleen.**

Target Organs : Blood, Kidneys, Liver, Spleen, Nervous system.

### Potential Health Effects

Eye : Cause eye irritation. May result in corneal injury. May cause pink, puffy eyelids due to an allergic reaction.

Skin : May cause skin irritation. Prolonged and/or repeated contact may cause irritation and/or dermatitis. May be absorbed through the skin. Contact with the skin may cause the skin to appear to be blue and the nails brittle and yellow.

Ingestion : May cause irritation of the digestive tract. May cause liver and kidney damage. May be harmful if swallowed. May cause alopecia (loss of hair) . May cause spleen damage. May cause blood abnormalities. Effects may be delayed. May cause garlic smell on the breath and body.

Inhalation : Cause respiratory tract irritation. May cause effects similar to those described for ingestion. May produce anemia, leucocytosis(increase in the white blood cell count) , cloudy swelling and fatty degeneration of the viscera.

Chronic : Prolonged or repeated skin contact may cause dermatitis. May cause reproductive and fetal effects. Chronic exposure to selenium may cause central nervous system effects, digestive tract disturbances, pallor, garlic breath, Chronic exposure to selenium may cause pallor, garlic breath, metallic taste, anemia, liver and spleen damage. Chronic selenium poisoning is characterized by loss hair and nails, skin lesions, and abnormalities of the nervous system.

GHS:



Signal Word: Danger

**4. First Aid measures**

- Eye** : **Immediately flush eyes with plenty of water for at least 15 minutes, Occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do not allow victim to rub or keep eyes closed.**
- Skin** : **Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.**
- Ingestion** : **Never give anything by mouth to an unconscious person. Get medical aid immediately. Do not induce vomiting. If victim is conscious and alert, rinse mouth and drink 2-4 cups of milk or water.**
- Inhalation** : **Remove from exposure to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do not use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.**

**5. Fire fighting measures**

- General information** : **As in any fire, wear a self-contained breathing apparatus in pressure-demand. MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.**
- Extinguish media** : **Use water spray, dry chemical, carbon dioxide or chemical foam.**

**6. Accidental Release Measures**

- General Information** : **Use proper personal protective equipment as indicated section 8.**
- Spills/Leaks** : **Vacuum or sweep up material and place into a suitable disposal Container.  
Avoid generating dusty condition. Provide ventilation.**

**7. Handling and Storage**

- Handling** : **Wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.**
- Storage** : **Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.**

**8. Exposure controls, personal protection**

- Engineering controls** : **Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use process enclosure, local exhaust ventilation or other engineering controls to control airborne levels.**
- Exposure limits** : **ACGIH TLV 0.2mg(Se)/m<sup>3</sup>  
OSHA TWA 0.2mg(Se)/m<sup>3</sup>  
NIOSH TWA 0.2mg(Se)/m<sup>3</sup>**
- OSHA Vacated PELs** : **OSHA TWA 0.2mg(Se)/m<sup>3</sup>**

## Personal protective equipment

- : Eyes-Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN 166.
- : Skin-Wear appropriate protective gloves to prevent skin exposure.
- : Clothing-Wear appropriate clothing to prevent skin exposure.

## 9. Physical and Chemical Properties

- Physical state : Solid
- Appearance : Small blue-black metallic shot
- Odor : Not available
- Vapor pressure : Not available
- Vapor density : Not available
- Boiling point : 690°C
- Melting point : 221°C
- Flash point : Not available
- Solubility : Insoluble in water
- Molecular formula : Se
- Molecular weight : 78.96

## 10. Stability and Reactivity

- Chemical Stability : Stable under ordinary conditions of use and storage.
- Incompatibilities with other materials : Strong oxidizers, Strong acids, Metal oxides, Carbides, Fluorine, Oxygen, and Potassium.
- Hazardous Decomposition products : Irritating and toxic fumes and gases, selenium/selenium oxides.

## 11. Toxicological Information

- RTECS# : CAS#7782-49-2
- LD50/LC50 : Oral, rat : LD50=6700mg/kg
- Carcinogen city : EPA/IRIS Group D1-Not classifiable as a human carcinogen
- Epidemiology : No information available
- Teratogenicity : No information available
- Reproductive Effects : Oral, mus TOL0=134mg : kg (multigeneration)
- Mutagenicity : Oral, mus TOL0=480mg/kg/60D-C

## 12. Ecological Information

- Ecotoxicity : Algae : IC50(72 h) : 38mg/l  
Fish : LC50(96 h) : >100mg/l

## 13. Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Waste generators must consult state and local hazardous waste regulation to ensure complete and accurate classification.

**14. Transport information**

**US DOT**

**Shipping name** : **Selenium**  
**Hazard class** : **Not applicable**  
**UN number** : **Not applicable**  
**Packing group** : **Not applicable**

**15. Regulatory Information**

**US Federal**

**TSCA**

CAS#7782-49-2 is listed on the TSCA inventory.

**OSHA**

None of the chemicals in this product are considered highly hazardous by OSHA.

**SARA**

**Section 302(RQ)**

CERCLA statutory RQ is 1 pound (0.454kg) ; No. RQ is be

**Section 313**

This material contains selenium which is subject to the reporting requirements of Section 313 of SARA title III and 40 CFR part 372.

**Clean Air Act**

This material does not contains any hazardous air pollutants.

**Clean Water Act**

CAS#7782-49-2 is listed as a Priority Pollutant under and a Toxic Pollutant under the Clean Water Act.

**16. Additional Information**

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost damages, howsoever arising, even if the company has been advised of the possibility of such damages.