



GARDENA, CA  
NEW BRUNSWICK, NJ

# Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table><tr><td>Health Hazard</td><td>2</td></tr><tr><td>Fire Hazard</td><td>2</td></tr><tr><td>Reactivity</td><td>0</td></tr></table>	Health Hazard	2	Fire Hazard	2	Reactivity	0	 See Section 15.
Health Hazard	2							
Fire Hazard	2							
Reactivity	0							

## Section 1. Chemical Product and Company Identification

Page Number: 1

<b>Common Name/ Trade Name</b>	<b>Selenium, Powder</b>	<b>Catalog Number(s).</b>	S1025
		<b>CAS#</b>	7782-49-2
<b>Manufacturer</b>	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	<b>RTECS</b>	VS7700000
		<b>TSCA</b>	TSCA 8(b) inventory: Selenium, Powder
<b>Commercial Name(s)</b>	Not available.	<b>CI#</b>	Not available.
<b>Synonym</b>	Not available.	<b>IN CASE OF EMERGENCY</b> <b><u>CHEMTREC (24hr) 800-424-9300</u></b>  CALL (310) 516-8000	
<b>Chemical Name</b>	Selenium		
<b>Chemical Family</b>	Not available.		
<b>Chemical Formula</b>	Se		
<b>Supplier</b>	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248		

## Section 2. Composition and Information on Ingredients

		<i>Exposure Limits</i>			
Name	CAS #	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )	CEIL (mg/m <sup>3</sup> )	% by Weight
1) Selenium, Powder	7782-49-2	0			100

<b>Toxicological Data on Ingredients</b>	<b>Selenium, Powder:</b> ORAL (LD50): Acute: 6700 mg/kg [Rat].
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## Section 3. Hazards Identification

<b>Potential Acute Health Effects</b>	Hazardous in case of eye contact (irritant). Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation. Severe over-exposure can result in death.
<b>Potential Chronic Health Effects</b>	<b>CARCINOGENIC EFFECTS:</b> 3 (Not classifiable for human.) by IARC. <b>MUTAGENIC EFFECTS:</b> Not available. <b>TERATOGENIC EFFECTS:</b> Not available. <b>DEVELOPMENTAL TOXICITY:</b> Not available. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Continued on Next Page

**Section 4. First Aid Measures**

<b>Eye Contact</b>	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.
<b>Serious Skin Contact</b>	Not available.
<b>Inhalation</b>	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
<b>Serious Inhalation</b>	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. <b>WARNING:</b> It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.
<b>Ingestion</b>	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
<b>Serious Ingestion</b>	Not available.

**Section 5. Fire and Explosion Data**

<b>Flammability of the Product</b>	Flammable.
<b>Auto-Ignition Temperature</b>	Not available.
<b>Flash Points</b>	Not available.
<b>Flammable Limits</b>	Not available.
<b>Products of Combustion</b>	Not available.
<b>Fire Hazards in Presence of Various Substances</b>	Flammable in presence of open flames and sparks, of heat.
<b>Explosion Hazards in Presence of Various Substances</b>	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
<b>Fire Fighting Media and Instructions</b>	Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
<b>Special Remarks on Fire Hazards</b>	Material in powder form, capable of creating a dust explosion. Selenium reacts incandescently with the following: Hexalithium disilicide, Nickel (gently heating), Sodium, Potassium, Uranium (with heat), Zinc (with heat), Platinum sponge, Phosphorus, various metal acetylides (barium, calcium, strontium, thorium), any chlorate (with the exception of alkali metals), powdered barium peroxide.
<b>Special Remarks on Explosion Hazards</b>	Mixtures of selenium and sodium peroxide are explosive. Selenium will form explosive products with metal amides. Nitrogen trichloride explodes on contact with Selenium.

**Section 6. Accidental Release Measures**

<b>Small Spill</b>	Use appropriate tools to put the spilled solid in a convenient waste disposal container.
<b>Large Spill</b>	Flammable solid. Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

**Section 7. Handling and Storage**

<b>Precautions</b>	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, metals.
<b>Storage</b>	Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

**Section 8. Exposure Controls/Personal Protection**

<b>Engineering Controls</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
<b>Personal Protection</b>	Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
<b>Personal Protection in Case of a Large Spill</b>	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
<b>Exposure Limits</b>	<p>TWA: 0.2 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States]  TWA: 0.2 (mg/m<sup>3</sup>) from OSHA (PEL) [United States]  TWA: 0 to 2 (mg/m<sup>3</sup>) from NIOSH [United States]  TWA: 0.1 STEL: 0.3 (mg/m<sup>3</sup>) [United Kingdom (UK)]  TWA: 0.2 (mg/m<sup>3</sup>) [Canada]</p> <p>Consult local authorities for acceptable exposure limits.</p>

**Section 9. Physical and Chemical Properties**

<b>Physical state and appearance</b>	Solid. (Solid metallic powder.)	<b>Odor</b>	Odorless.
<b>Molecular Weight</b>	78.96g/mole	<b>Taste</b>	Not available.
<b>pH (1% soln/water)</b>	Not applicable.	<b>Color</b>	Grey. Black. Orange-red
<b>Boiling Point</b>	685°C (1265°F)		
<b>Melting Point</b>	217°C (422.6°F) - 221 C.		
<b>Critical Temperature</b>	Not available.		
<b>Specific Gravity</b>	4.81 (Water = 1)		
<b>Vapor Pressure</b>	Not applicable.		
<b>Vapor Density</b>	Not available.		
<b>Volatility</b>	Not available.		
<b>Odor Threshold</b>	Not available.		
<b>Water/Oil Dist. Coeff.</b>	Not available.		
<b>Ionicity (in Water)</b>	Not available.		
<b>Dispersion Properties</b>	See solubility in water, diethyl ether.		
<b>Solubility</b>	Soluble in diethyl ether. Insoluble in cold water, hot water. Soluble in aqueous potassium cyanide solution, potassium sulfite solution, dilute aqueous caustic alkali solutions, concentrated nitric acid, sulfuric acid, methylene iodide, benzene, chloroform. Insoluble in alcohol. Slightly soluble in carbon disulfide.		

**Section 10. Stability and Reactivity Data**

<b>Stability</b>	The product is stable.
<b>Instability Temperature</b>	Not available.
<b>Conditions of Instability</b>	Incompatible materials
<b>Incompatibility with various substances</b>	Reactive with oxidizing agents, metals.
<b>Corrosivity</b>	Non-corrosive in presence of glass.
<b>Special Remarks on Reactivity</b>	Selenium reacts violently with: Barium carbide, Bromine pentafluoride (may ignite on contact), Calcium carbide, Chlorates, Chlorine trifluoride (reacts violently, often with ignition), Chromic oxide, Chromium trioxide, Fluorine (ignites on contact), Lithium carbide, Lithium silicide, Metals, Nickel, Nitric acid, Sodium, Oxygen, Potassium, Potassium bromate (aqueous solution will react violently with selenium), Rubidium carbide, Zinc, Silver bromate, Strontium carbide, Thorium carbide, Uranium, Fluorine, Barium carbide, Strontium carbide, Lithium carbide, Nitrogen trichloride.
<b>Special Remarks on Corrosivity</b>	Not available.
<b>Polymerization</b>	Will not occur.

**Section 11. Toxicological Information**

<b>Routes of Entry</b>	Inhalation. Ingestion.
<b>Toxicity to Animals</b>	Acute oral toxicity (LD50): 6700 mg/kg [Rat].
<b>Chronic Effects on Humans</b>	<b>CARCINOGENIC EFFECTS:</b> 3 (Not classifiable for human.) by IARC.
<b>Other Toxic Effects on Humans</b>	Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.
<b>Special Remarks on Toxicity to Animals</b>	Not available.
<b>Special Remarks on Chronic Effects on Humans</b>	May cause adverse reproductive effects based on animal test data. May cause cancer based on animal test data.
<b>Special Remarks on other Toxic Effects on Humans</b>	Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: Dust causes eye irritation. May cause conjunctivitis. Inhalation: Inhalation of dust causes respiratory tract irritation with coughing, sore throat, burning sensation of nostrils, nasal congestion, irritation of oral mucous membranes, sneezing, breathing difficulty, and headache. Inhalation of selenium fumes can cause bronchospasm, chills, fever, headache, chemical pneumonitis, symptoms similar to those of fume metal fever. Ingestion: May cause vomiting, nausea, abdominal pain, diarrhea. May affect behavior/central nervous system (somnolence, restlessness, irritability, giddiness, dizziness, CNS depression), respiration (difficulty breathing), metabolism. Chronic Potential Health Effects: Prolonged or repeated exposure to Selenium as been associated with garlic odor of breath, metallic taste, gastrointestinal disturbances, bronchitis, skin eruptions, cracked fingernails, loss of hair, pallor, lassitude, dizziness, central nervous system depression, somnolence, restlessness, irritability, giddiness, sluggish pupliary reflexes, paresthesias, hyperrelexia, pulmonary edema, and possible liver and kidney damage.

**Section 12. Ecological Information**

<b>Ecotoxicity</b>	Not available.
<b>BOD5 and COD</b>	Not available.
<b>Products of Biodegradation</b>	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
<b>Toxicity of the Products of Biodegradation</b>	The products of degradation are less toxic than the product itself.

**Continued on Next Page**

Special Remarks on the  
Products of Biodegradation

Not available.

### Section 13. Disposal Considerations

#### Waste Disposal

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

### Section 14. Transport Information

#### DOT Classification

CLASS 4.1: Flammable solid.

#### Identification

UNNA: 3089 : Metal Powder, flammable, n.o.s.(Selenium powder) PG: III

#### Special Provisions for Transport

Not available.

#### DOT (Pictograms)



### Section 15. Other Regulatory Information and Pictograms

#### Federal and State Regulations

New York release reporting list: Selenium, Powder  
Pennsylvania RTK: Selenium, Powder  
Michigan critical material: Selenium, Powder  
Massachusetts RTK: Selenium, Powder  
Massachusetts spill list: Selenium, Powder  
New Jersey: Selenium, Powder  
New Jersey spill list: Selenium, Powder  
Louisiana spill reporting: Selenium, Powder  
California Director's List of Hazardous Substances: Selenium, Powder  
TSCA 8(b) inventory: Selenium, Powder  
SARA 313 toxic chemical notification and release reporting: Selenium, Powder  
CERCLA: Hazardous substances.: Selenium, Powder: 100 lbs. (45.36 kg)

#### California Proposition 65 Warnings

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.  
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

#### Other Regulations

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).  
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 231-957-4).  
Canada: Listed on Canadian Domestic Substance List (DSL).  
China: Listed on National Inventory.  
Japan: Not listed on National Inventory (ENCS).  
Korea: Listed on National Inventory (KECI).  
Philippines: Listed on National Inventory (PICCS).  
Australia: Listed on AICS.

#### Other Classifications

##### WHMIS (Canada)

Not controlled under WHMIS (Canada).

##### DSCL (EEC)

R23/25- Toxic by inhalation and if swallowed.  
R33- Danger of cumulative effects.  
R53- May cause long-term adverse effects in the aquatic environment.

S28- After contact with skin, wash immediately with plenty of water.  
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.  
S20/21- When using do not eat, drink or smoke.

## HMIS (U.S.A.)

Health Hazard	2
Fire Hazard	2
Reactivity	0
Personal Protection	E

## National Fire Protection Association (U.S.A.)

Health



Flammability

Reactivity

Specific hazard

WHMIS (Canada)  
(Pictograms)DSCL (Europe)  
(Pictograms)TDG (Canada)  
(Pictograms)ADR (Europe)  
(Pictograms)

## Protective Equipment



Gloves.



Lab coat.



Dust respirator. Be sure to use an approved/certified respirator or equivalent.



Splash goggles.

## Section 16. Other Information

## MSDS Code

S3180

## References

Not available.

## Other Special Considerations

Uses: Toning of baths in photography; as a pigment in manufacturing of ruby-, pink-, orange-, or red-colored glass; as a metallic base in making electrode for arc lights, electrical instruments, and apparatus; as a rectifier in radio and television sets; in selenium photocells; in semiconductor fusion mixtures; manufacture of rubber, pigments, metal alloys, textiles, petroleum, medical therapeutic agents, photographic emulsions; added to copper, lead, and steel alloys to improve their machinability and to replace lead in brasses for plumbing applications.

Validated by Sonia Owen on 5/15/2012.

Verified by Sonia Owen.

Continued on Next Page

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CALL (310) 516-8000

**Notice to Reader**

*All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.*