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MATERIAL SAFETY DATA SHEET

Selenium

MSDS Number : 001

Effective Date : 01/20/09

I. Product Identification

Trade Name : Selenium
 Synonyms : Elemental Selenium; Selen
 Chemical Formula : Se
 Molecular Weight : 78.96
 Manufacturer : Pacific Rare Specialty Metals And Chemicals, Inc. (PRSMCI)
 Lot 6 Blk 1, Phase II, West Avenue, Cavite Economic Zone,
 Rosario, Cavite, Philippines, 4106
 Emergency Phone : (+63-02) 784 - 4000
 Web Site : www.pacificrarespecialty.com

II. Composition / Information on Components

Selenium (CAS# 7782-49-2); 100%
Identification number(s):
 EINECS Number: 231-957-4
 EU Number: 034-001-00-2

III. Hazard Identification

Flammability Rating : 0 (Not combustible)
 Reactivity Rating : 0 (Not reactive when mixed with water)
 Health Rating : 1 (Maybe harmful if swallowed)
 Contact Rating : 1 (Causes eye irritation)
 Lab Protective Equip : Goggles, Lab coat, Gloves

IV. First –Aid Measures

Inhalation : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion : DO NOT induce vomiting. Give large amounts of water. Never give anything by mouth to an unconscious person. Get medical attention.

- Skin Contact** : Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
- Eye Contact** : Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

V. Fire Fighting Measures

- Fire** : Not considered to be a fire hazard.
- Explosion** : Not considered to be an explosion hazard.
- Fire Extinguishing Media:** Use any means suitable for extinguishing surrounding fire.
- Special Information** : In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

VI. Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

VII. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

VIII. Exposure Controls / Personal Protection

- Airborne Exposure Limits** : OSHA PEL : 0.2 mg/m³, Se Compounds, as Se
ACGIH TLV : 0.2 mg/m³, Se Compounds, as Se
- Ventilation System** : Local exhaust ventilation is preferred to control emissions at the source.
- Respiratory Protection** : NIOSH Approved Gas / Vapor respirators
- Skin Protection** : Wear chemical resistant clothing, boots, gloves, lab coat, apron or coveralls
- Eye Protection** : safety glasses or goggles, full face shields
- Work / Hygienic Practices** : No food should be allowed in the work area.

Maintain eye wash fountain and quick-drench facilities in work area.

IX. Physical and Chemical Properties

- Form : Solid
Color : Grey
Odor : Odorless
Solubility : Insoluble in Water
- Specific Gravity : 4.79
Melting Point : 217 °C
Boiling Point : 685 °C

X. Stability and Reactivity

- Stability** : Stable under ordinary conditions of use and storage.
- Hazardous Decomposition Products:** Toxic oxides of selenium form when heated to decomposition.
- Hazardous Polymerization** : Will not occur.
- Incompatibilities** : Strong oxidizers, strong acids, and a wide range of other

Conditions to Avoid : materials.
Moisture and incompatibles.

XI. Toxicological Information

Toxicological Data : Oral Rat LD50: > 5000 mg/kg. Investigated as a tumorigen and a reproductive effector.
Carcinogenicity : EPA / IRIS classification: Group D1 - Not classifiable as a human carcinogen.

XII. Ecological Information

No information found.

General Note : Do not allow material to be released to the environment without proper governmental permits.

XIII. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

XIV. Transport Information

Not a hazardous material for transportation.

DOT regulations Hazard Class : None
Land transport ADR / RID class : None
Maritime Transport IMDG Class : None
Air transport ICAO-TI and IATA-DGR Class : None

XV. Regulatory Information

Chemical Inventory Status - Part 1

<u>Ingredient</u>	<u>TSCA</u>	<u>EC</u>	<u>Japan</u>	<u>Australia</u>
Selenium (7782-49-2)	Yes	Yes	No	Yes

Chemical Inventory Status - Part 2

<u>Ingredient</u>	<u>Korea</u>	<u>Canada</u> <u>DSL</u>	<u>NDSL</u>	<u>Phil.</u>
Selenium (7782-49-2)	Yes	Yes	No	Yes

Federal, State & International Regulations - Part 1

<u>Ingredient</u>	<u>SARA 302</u>		<u>List</u>	<u>SARA 313</u>	
	<u>RQ</u>	<u>TPQ</u>		<u>Chemical</u>	<u>Catg.</u>
Selenium (7782-49-2)	No	No	No	Selenium	cmp

Federal, State & International Regulations - Part 2

<u>Ingredient</u>	<u>CERCLA</u>	<u>RCRA</u> <u>261.33</u>	<u>TSCA</u> <u>8 (d)</u>
Selenium (7782-49-2)	100	No	No

Chemical Weapons Convention: No TSCA 12 (b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: No Pure / Solid)

Australian Hazchem Code: 2Z
Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR

XVI. Other Information

NFPA Ratings: Health: **2** Flammability: **0** Reactivity: **0**

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