



Lot 6 Block 1, Phase 2, Cavite Economic Zone, Rosario, Cavite, Philippines
 Webpage : www.pacificrarespecialty.com E-mail : prmcav@info.com.ph
 Tel. No. : (63-02) 784-4000 Fax No. (63-46) 437-2524



MATERIAL SAFETY DATA SHEET

Selenium Dioxide

MSDS Number : 010

Effective Date : 01/20/09

I. Product Identification

Trade Name : Selenium Dioxide
 Synonyms : Selenium oxide; selenious anhydride
 Chemical Formula : SeO₂
 Molecular Weight : 110.96

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 Dioxide (CAS# 7446-08-04) 99.9 %
 EINECS Number : 231-194-7

III. Hazard Identification

Flammability Rating : 0 (Not combustible)
 Reactivity Rating : 0 (Not reactive when mixed with water)
 Health Rating : 3 (Poison, toxic by inhalation and if swallowed)
 Contact Rating : 2 (Causes eye and skin irritation)
 Protective Equip : Goggles, Gloves

Potential Health Effects :

Acute toxicity of soluble selenium compounds is high. A general tissue poison like arsenic, presumably attacking Sulfhydryl enzymes.

Inhalation : Highly toxic vis inhalation. May cause severe breathing problems that may not appear for several hours after exposure. Irritates the upper respiratory tract. May cause headache, fever, chills.

Ingestion : Toxic. May be fatal if swallowed. May cause severe stomach problems.

Skin Contact : May cause skin burns. May be absorbed through the skin in toxic quantities. May cause skin rash. Prolonged contact may cause skin sensitization.

Eye Contact : Causes eye irritation. May cause "Rose eye", an allergy of the eyelids in which they become puffy.

Chronic Exposure: Chronic exposure may cause paleness, coated tongue, stomach disorders, nervousness, metallic taste and garlic breath.

Aggravation of Pre-existing Conditions:

Person with a history of asthma, allergies, or known sensitization to selenium, or with a history of other chronic respiratory disease, gastrointestinal disturbances, disorders of the liver or kidneys, or recurrent dermatitis would be expected to be at increased risk from exposure.

IV. First - Aid Measures

- Inhalation** : Remove to fresh air. If not breathing, give artificial respiration. If breathing is Difficult, give oxygen. Get medical attention immediately.
- Ingestion** : Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Skin Contact** : Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. 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. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

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. Protect from moisture. Wear special protective equipment (Sec. 8) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace. 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:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece particulate respirator (NIOSH type N100 filters) may be worn for up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator.

WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection :

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection :

Use chemical safety goggles and/or full face shield where dusting or splashing of solution is possible. Maintain eye wash fountain and quick-drench facilities in work area.

IX. Physical and Chemical Properties

Form	: Crystalline powder	Specific Gravity	: 3.95
Color	: White	Melting Point	: 340°C (644°F)
Odor	: Vapor has a pungent sour smell	Boiling Point	: Not applicable
Solubility	: 28% in water @ 20°C (68°F)	Vapor Pressure (mmHg):	1 @ 157°C (315°F)

X. Stability and Reactivity

Stability	:	Stable under ordinary conditions of use and storage
Hazardous Decomposition Products:	:	Toxic metal fumes may form when heated to decomposition.
Hazardous Polymerization	:	Will not occur.
Incompatibilities	:	Organic materials, phosphorous trichloride, strong acids, ammonia
Conditions to Avoid	:	Moisture and incompatibles.

XI. Toxicological Information

Toxicological Data	:	Oral Rat LD50 : 68.1 mg/kg. Investigated as a mutagen, reproductive effector
---------------------------	---	--

XII. Ecological Information

Environmental Fate	:	No information found.
Environmental Toxicity	:	No information found.

XIII. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to RCRA 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. Disposal of container and unused contents in accordance with federal, state and local requirements.

XIV. Transport Information

Domestic (Land, D.O.T.) :

Proper Shipping Name: SELENIUM COMPOUND, N.O.S. (SELENIUM DIOXIDE)

Hazard Class: 6.1

UN / NA : UN3283

Packing Group: I

International (Water, I.M.O.) :

Proper Shipping Name: SELENIUM COMPOUND, N.O.S. (SELENIUM DIOXIDE)

Hazard Class: 6.1

UN / NA : UN3283

Packing Group: I

International (Air, I.C.A.O.) :

Proper Shipping Name: SELENIUM COMPOUND, N.O.S. (SELENIUM DIOXIDE)

Hazard Class: 6.1

UN / NA : UN3283

Packing Group: III

XV. Regulatory Information

```

-----\Chemical Inventory Status - Part 1\-----
Ingredient                                     TSCA  EC   Japan  Australia
-----
Selenium Dioxide /SeO2/ (7446-08-4)          Yes  Yes  Yes    Yes

-----\Chemical Inventory Status - Part 2\-----
Ingredient                                     Korea  DSL   NDSL  Phil.
-----
Selenium Dioxide /SeO2/ (7446-08-4)          Yes   Yes   No    Yes

-----\Federal, State & International Regulations - Part 1\-----
Ingredient                                     -SARA 302-  -SARA 313-
RQ      TPQ      List  Chemical Catg.
-----
Selenium Dioxide /SeO2/ (7446-08-4)          No   No   No    Selenium cmp

-----\Federal, State & International Regulations - Part 2\-----
Ingredient                                     -RCRA-    -TSCA-
CERCLA  261.33    8(d)
-----
Selenium Dioxide /SeO2/ (7446-08-4)          10      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)

XVI. Other Information

NFPA Ratings: (estimated) Health: **3** ; Flammability: **0**; Reactivity

Disclaimer:

Pacific Rare Specialty Metals and Chemicals Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. PRSMCI MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, PRSMCI WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.
