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MATERIAL SAFETY DATA SHEET

Zinc Selenite

MSDS Number : 013

Effective Date : 01/20/09

I. Product Identification

Trade Name : Zinc Selenite
 Synonyms : Not Available
 Chemical Formula : $ZnSeO_3$
 Molecular Weight : 192.33

Manufacturer : Pacific Rare Specialty Metals And Chemicals, Inc. (PRSMCI)
 Lot 6 Blk 1, Phase II, West Avenue, Cavite Economic Zone,
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II. Composition / Information on Components

Sodium Selenite (CAS# 13597-46-1)
 Selenium (CAS# 237-48-9) : 41 %

III. Hazard Identification

Flammability Rating : 0 (Not combustible)
 Reactivity Rating : 0 (Not reactive when mixed with water)
 Health Rating : 3 (Poison)
 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 : Irritant to the respiratory system. Soreness, coughing, labored breathing are symptoms which may subside and return. Lung edema may occur in acute cases. Cases with flu-like symptoms resembling metal fume fever within 24 hours of exposure have been reported.

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

Skin Contact: Causes severe irritation. Symptoms include redness, itching and pain.

Eye Contact: May cause severe irritation, redness, pain.

Chronic Exposure: Chronic selenium intoxication may cause depression, nervousness, dermatitis, gastrointestinal disturbances, giddiness, garlic odor of the breath and sweat, moderate emotional instability, excess tooth cavities, loss of fingernails and hair, metallic taste in the mouth, respiratory tract irritation, fatigue, allergic eye reactions, and severe skin lesions. Selenium intoxication has caused blood, liver, kidney and spleen effects in laboratory animals.

Aggravation of Pre-existing Conditions: People with a history of asthma, allergies, known sensitization to selenium, a history of other chronic respiratory disease, gastrointestinal disturbances, disorders of the liver, blood or kidneys, or recurrent dermatitis would be expected to be at increased risk from exposure. Special consideration should be given to women of childbearing age since the possibility that selenium may be teratogenic might place these women in a high risk group.

IV. First - Aid Measures

- Inhalation :** Allow victim to rest in a well ventilated area. Seek immediate medical attention.
- Serious Inhalation :** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing. If breathing is difficult, administer oxygen. If victim is not breathing, perform mouth to mouth resuscitation.
- Warning : It may be dangerous to the person providing aid to give mouth to mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.*
- Let the victim drink Ascorbic Acid solution (25 g in 1 L water). Induce vomiting by drinking 1L of D5NSS. Drink Ascorbic Acid solution (25 g in 1 L water) and rush the victim to the nearest hospital.
- Ingestion :** Remove dentures or any obstruction if there is but do not force fingers or a hard object between victim's teeth. Have a conscious person drink Ascorbic Acid solution (25 g in 1 L water). Induce vomiting by drinking 1L of D5NSS. Drink Ascorbic Acid solution (25 g in 1 L water) and rush the victim to the nearest hospital.
- Skin Contact :** If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as hands, gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
- Serious Skin Contact :** Wash with a disinfectant soap and cover the contaminated skin with an antibacterial cream. Seek immediate medical attention.
- Eye Contact :** Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelid open. DO NOT use an eye ointment. Seek medical attention.

V. Fire Fighting Measures

- Fire :** Not considered to be a fire hazard.
- Explosion :** Not considered to be an explosion hazard.
- Fire Extinguishing Media:** Use water spray, carbon dioxide, dry chemical powder and foam for fires involving this material. DO NOT use water jet.
- 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

Pick / Sweep up and place in a suitable container for reclamation or disposal using a method that does not generate dust. Ventilate area and neutralize residue with a dilute solution of sodium carbonate. Keep unnecessary and unprotected people away from area of spill. Wear appropriate protective equipment .

VII. Handling and Storage

Handling : Avoid eyes, skin and clothing contact and inhalation of this material as dust. Wash hands thoroughly after handling. Persons susceptible to allergies must not handle this material. Remove contaminated clothing and wash before reuse. Avoid prolong exposure. Wear special protective equipment for maintenance break-in or where exposures may exceed established exposure levels. Containers of this material maybe hazardous when empty since they retain product residues; observe all warnings and precautions listed for the product.

Storage : Keep in a tightly closed container, stored in a cool, dry, ventilated area away from heat, all sources of ignition, light. Protect against physical damage. Isolate from incompatible substances.

VIII. Exposure Controls / Personal Protection

Airborne Exposure Limits	:	OSHA PEL : 0.2 mg/m ³ , Selenium Compounds, as Se ACGIH TWA : 0.2 mg/m ³ , Selenium Compounds, as Se
Respiratory Protection	:	Use a half facepiece particulate respirator (NIOSH type 95 or better) may be worn up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lower. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn 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. <i>WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.</i>
Skin Protection	:	Wear impervious protective clothing, including boots, gloves, as appropriate, to prevent skin contact.
Eye Protection	:	Wear chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

IX. Physical and Chemical Properties

Form	:	Crystalline solid	Melting Point	:	Decomposes
Color	:	Cream to white powder	Boiling Point	:	Decomposes
Odor	:	odorless	Solubility	:	Easily soluble in Water

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.
Conditions to Avoid	:	Avoid open flame and sources of ignition.

XI. Toxicological Information

- Toxicological Data** : Oral Rat LD50 : 7 mg/kg. Investigated as a tumorigen, mutagen, reproductive effector.
- Reproductive Toxicity** : In laboratory animals, this compound has caused both birth defects and damage to the reproductive system.
- Carcinogenicity** : EPA / IRIS classification : Group D1 – Not classified as a human carcinogen. (IARC Category : # 3)

XII. Ecological Information

- Environmental Fate** : No information found.
- Environmental Toxicity** : For selenium salts : The LC50/96-hour values for fish are less than 10 mg/L. This material is expected to be toxic to very toxic to aquatic life.

XIII. Disposal Considerations

Discard any waste product, residue, disposable container, liner or spilled material in an environmentally acceptable manner that is in full compliance with all applicable national and local laws and regulations. Burn in a chemical incinerator equipped with an afterburner and scrubber. When this material is liquid, it is better to neutralize its chemical nature by using a dilute solution of sodium carbonate

XIV. Transport Information

	<u>Proper Shipping Name</u>	<u>Hazard Class</u>	<u>UN/NA</u>	<u>Packing Grp</u>
Domestic (Land, D.O.T.) :	Selenites	6.1	UN 2630	I
International (Water, I.M.O.) :	Selenites	6.1	UN 2630	I
International (Air, I.C.A.O.) :	Selenites	6.1	UN 2630	I

XV. Other Information

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

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