Heegermaterials

Material Safety Data Sheet
Selenium dioxide MSDS

Section 1: Chemical Product and Company Identification

Product Name: Selenium dioxide

Catalog Codes: 11445

CAS#: 7446-08-4

RTECS: VS8575000

TSCA: TSCA 8(b) inventory: Selenium dioxide

CI#: Not available.

Synonym: Selenium oxide (1:2); Selenous anhydride

Chemical Name: Selenium (IV) dioxide (1:2)

Chemical Formula: SeO2

Contact Information:

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Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Selenium dioxide	7446-08-4	100

Toxicological Data on Ingredients: Selenium dioxide: ORAL (LD50): Acute: 68.1mg/kg [Rat]. 23.3 mg/kg [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Corrosive to eyes and skin. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, liver, spleen, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction,

or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: 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.

Ingestion:
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.

Serious Ingestion: Not available.

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Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
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.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: When heated to decomposition it emits toxic fumes.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Corrosive solid. Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. 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

Precautions:
Keep container dry. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as reducing agents, organic materials, acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
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.

Personal Protection:
Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor and 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.

Exposure Limits:
TWA: 0.2 (mg(Se)/m) from ACGIH (TLV) [United States] Inhalation Consult local authorities for acceptable exposure limits.

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Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Lustrous solid. crystalline powder.)

Odor: Sour.

Taste: Acid.

Molecular Weight: 110.96 g/mole

Color: White or yellowish-white to slightly reddish.

pH (1% soln/water): Not available.

Boiling Point: Not available.

Melting Point: Sublimation temperature: 340°C (644°F)

Critical Temperature: Not available.

Specific Gravity: 3.954 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, acetone.

Solubility:
Soluble in cold water. Partially soluble in methanol, acetone.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, dust generation

Incompatibility with various substances: Reactive with reducing agents, organic materials, acids.

Corrosivity: Not available.

Special Remarks on Reactivity:
Incompatible with phosphorus trichloride, organic materials, reducing agents, alcohols, ammonia, nitric acid, and halogen acids.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

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Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 23.3 mg/kg [Mouse].

Chronic Effects on Humans: May cause damage to the following organs: blood, kidneys, liver, spleen, central nervous system (CNS).

Other Toxic Effects on Humans: Very hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
May cause adverse reproductive effects. May affect genetic material (mutagenic)

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Causes severe skin irritation, skin rash, and possible burns. Eyes: Causes severe irritation and possible burns. Persons who work in atmospheres containing selenium dioxide dust may develop a condition known as "rose eye", a pink allergy of the eyelids, which often become puffy. It may also cause conjunctivitis of the palpebral conjunctiva, but rarely of bulbar conjunctiva. May cause corneal injury. Inhalation: Breathing in dust can irritate nose (with dryness, nosebleeds), throat, mucous membranes of eyes, nose and throat, lungs (cough, phlegm), sternal pain, and/or shortness of breath. Higher exposure may cause build-up of fluid in the lungs (pulmonary edema). Acute exposure to fumes of Selenium oxide causes headache, nausea, vomiting, burning sensation in the nostrils with sneezing, dizziness, bronchospasm and severe dyspnea or breathing difficulties, followed by symptoms of fume metal fever characterized by flu-like symptoms with metallic taste, chest pain, weakness, fever, chills, increased white blood cell count, prolonged bronchitis, and pneumonitis. May casue spleen and liver damage. Ingestion: Harmful if swallowed. May cause severe gastrointestinal tract irritation with headache, nausea, vomiting, and possible burns. May affect the lungs(lung congestion), respiration (apnea), behavior/central nervous system(symtoms similar to inhalation), and cause liver and kidneys congestion or damage (somnolence, convulsions), respiration (apnea), asystole, diffuse swelling of the heart, and brain edema. Chronic Potential

Health Effects: Skin: Prolonged or repeated skin contact may cause sensitization (dermatitis). Long term exposure via inhalation may cause coated tongue, paleness, stomach disorders, nervousness, metallic taste and a garlic odor of the breath, and blood abnormalities. Ingestion: Prolonged or repeated ingestion may affect the blood(changes in red blood cell count, anemia, pigmented or nucleated red blood cells or other blood abnormalities), cause digestive tract disturbances, and kidney, liver, or spleen damage.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

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.

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Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Selenium Compound, n.o.s (Selenium Dioxide) UNNA: 3283 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Illinois chemical safety act: Selenium dioxide New York release reporting list: Selenium dioxide Pennsylvania RTK: Selenium dioxide Massachusetts RTK: Selenium dioxide Massachusetts spill list: Selenium dioxide New Jersey: Selenium dioxide New Jersey spill list: Selenium dioxide Louisiana spill reporting: Selenium dioxide California Director's List of Hazardous Substances: Selenium dioxide TSCA 8(b) inventory: Selenium dioxide SARA 313 toxic chemical notification and release reporting: Selenium dioxide CERCLA: Hazardous substances.: Selenium dioxide: 10 lbs. (4.536 kg)

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.

Other Classifications:

WHMIS (Canada): CLASS E: Corrosive solid.

DSCL (EEC):

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 0

Personal Protection: j

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

Health: 3

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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