

MATERIAL SAFETY DATA SHEET

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Version 1.10

Section 1 - Product and Company Information

Product Name	SODIUM SELENITE
Product Number	S1382
Brand	SIGMA
Company	Sigma-Aldrich
Address	3050 Spruce Street SAINT LOUIS MO 63103 US
Technical Phone:	800-325-5832
Fax:	800-325-5052
Emergency Phone:	314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
SODIUM SELENITE	10102-18-8	Yes

Formula	Na ₂ SeO ₃
Synonyms	Disodium selenite * Natriumselenit (German)
RTECS Number:	VS7350000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Highly Toxic (USA) Very Toxic (EU). Dangerous for the environment. Toxic by inhalation. Very toxic if swallowed. Contact with acids liberates toxic gas. Risk of serious damage to eyes. May cause sensitization by skin contact. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Target organ(s): Liver. Blood.

HMIS RATING

HEALTH: 3*
FLAMMABILITY: 0
REACTIVITY: 1

NFPA RATING

HEALTH: 3
FLAMMABILITY: 0
REACTIVITY: 1

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Noncombustible. Use extinguishing media appropriate to surrounding fire conditions.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

SPECIAL REQUIREMENTS

Moisture sensitive.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	0.2 MG(SE)/M3
USA	MSHA Standard-air	TWA	0.2 MG(SE)/M3
USA	OSHA.	PEL	8H TWA 0.2 MG(SE)/M3
New Zealand OEL			
Remarks: check ACGIH TLV			

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Solid Color: Faintly beige Form: Powder	
Property	Value	At Temperature or Pressure
Molecular Weight	172.94 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	350 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.
Conditions to Avoid: Moisture.
Materials to Avoid: Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Selenium/selenium oxides,
Sodium/sodium oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: May cause eye irritation.
Inhalation: Material may be irritating to mucous membranes and
upper respiratory tract. Toxic if inhaled.
Ingestion: May be fatal if swallowed.

SENSITIZATION

Skin: May cause allergic skin reaction.

TARGET ORGAN(S) OR SYSTEM(S)

Eyes. Kidneys. Blood. Liver.

SIGNS AND SYMPTOMS OF EXPOSURE

Anemia. Salivation. Tremors. Alopecia. Vomiting. Dermatitis.
Nausea, dizziness, and headache. Exposure can cause:

TOXICITY DATA

Oral

Rat

7 mg/kg

LD50

Remarks: Gastrointestinal:Hypermotility, diarrhea. Lungs,
Thorax, or Respiration:Dyspnea. Behavioral:Somnolence (general
depressed activity).

Intravenous

Rat

3 MG/KG

LD50

Parenteral

Rat

6570 UG/KG

LD50

Oral

Mouse

7.08 mg/kg

LD50

Subcutaneous

Mouse
13 MG/KG
LD50

Intravenous

Mouse
5 MG/KG
LD50

Remarks: Lungs, Thorax, or Respiration:Other changes.
Cardiac:Other changes. Peripheral Nerve and Sensation:Flaccid
paralysis without anesthesia (usually neuromuscular blockage).

Intracervical

Mouse
300 UG/KG
LD50

Remarks: Lungs, Thorax, or Respiration:Dyspnea.
Behavioral:Change in motor activity (specific assay). Peripheral
Nerve and Sensation:Flaccid paralysis without anesthesia
(usually neuromuscular blockage).

Intravenous

Dog
1916 UG/KG
LD50

Remarks: Gastrointestinal:Hypermotility, diarrhea. Lungs,
Thorax, or Respiration:Respiratory stimulation.
Cardiac:Arrythmias (including changes it conduction).

Oral

Rabbit
2.25 mg/kg
LD50

Intramuscular

Rabbit
2530 UG/KG
LD50

Oral

Guinea pig
5.06 mg/kg
LD50

Parenteral

Chicken
8500 UG/KG
LD50

Oral

Horse, donkey
13 mg/kg
LD50

Remarks: Gastrointestinal:Hypermotility, diarrhea. Lungs,
Thorax, or Respiration:Respiratory stimulation. Cardiac:Pulse
rate increased without fall it BP.

Intramuscular

Domestic Animals
1533 UG/KG
LD50

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and

Taste):Olfaction:Other changes. Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea.

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC CARCINOGEN LIST

Rating: Group 3

CHRONIC EXPOSURE - TERATOGEN

Species: Mouse
Dose: 45995 UG/KG
Route of Application: Subcutaneous
Exposure Time: (7-12D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Dose: 2836 UG/KG
Route of Application: Intravenous
Exposure Time: (12D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Hamster
Dose: 17290 MG/KG
Route of Application: Oral
Exposure Time: (8D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

CHRONIC EXPOSURE - MUTAGEN

Result: Laboratory experiments have shown mutagenic effects.

Species: Human
Dose: 50 UMOL/L
Cell Type: fibroblast
Mutation test: DNA damage

Species: Human
Dose: 80 UMOL/L
Exposure Time: 30M
Cell Type: fibroblast
Mutation test: Unscheduled DNA synthesis

Species: Human
Dose: 80 UMOL/L
Cell Type: fibroblast
Mutation test: DNA inhibition

Species: Human
Dose: 10 UMOL/L
Cell Type: HeLa cell
Mutation test: DNA inhibition

Species: Human
Dose: 50 UMOL/L
Cell Type: HeLa cell

Mutation test: Other mutation test systems

Species: Human
Dose: 80 UMOL/L
Cell Type: fibroblast
Mutation test: Other mutation test systems

Species: Human
Dose: 80 UMOL/L
Cell Type: lymphocyte
Mutation test: Cytogenetic analysis

Species: Human
Dose: 80 UMOL/L
Cell Type: fibroblast
Mutation test: Cytogenetic analysis

Species: Human
Dose: 7900 NMOL/L
Exposure Time: 19H
Cell Type: leukocyte
Mutation test: Sister chromatid exchange

Species: Human
Dose: 7900 NMOL/L
Cell Type: lymphocyte
Mutation test: Sister chromatid exchange

Species: Rat
Dose: 100 UMOL/L
Cell Type: liver
Mutation test: Unscheduled DNA synthesis

Species: Rat
Dose: 7500 NMOL/L
Cell Type: lymphocyte
Mutation test: Cytogenetic analysis

Species: Rat
Route: Intravenous
Dose: 10 MG/KG
Mutation test: Cytogenetic analysis

Species: Rat
Route: Oral
Dose: 4200 UG/KG
Exposure Time: 5W
Mutation test: sperm

Species: Mouse
Dose: 20 UMOL/L
Cell Type: leukocyte
Mutation test: DNA damage

Species: Mouse
Dose: 50 NMOL/L
Cell Type: mammary gland
Mutation test: Unscheduled DNA synthesis

Species: Mouse
Route: Oral
Dose: 7 MG/KG

Mutation test: Cytogenetic analysis

Species: Hamster
Route: Intraperitoneal
Dose: 6650 UG/KG
Mutation test: Cytogenetic analysis

Species: Hamster
Route: Intraperitoneal
Dose: 6650 UG/KG
Mutation test: Sister chromatid exchange

Species: Hamster
Dose: 2 MG/L
Cell Type: lung
Mutation test: Sister chromatid exchange

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 384 MG/KG
Route of Application: Oral
Exposure Time: (34W MALE)
Result: Paternal Effects: Other effects on male. Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat
Dose: 15 MG/KG
Route of Application: Oral
Exposure Time: (13W MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Mouse
Dose: 999 MG/KG
Route of Application: Oral
Exposure Time: (1-19D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Dose: 50 MG/KG
Route of Application: Oral
Exposure Time: (8-12D PREG)
Result: Effects on Newborn: Live birth index (# fetuses per litter; measured after birth).

Species: Mouse
Dose: 112 MG/KG
Route of Application: Oral
Exposure Time: (6-13D PREG)
Result: Effects on Newborn: Growth statistics (e.g., reduced weight gain). Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Newborn: Live birth index (# fetuses per litter; measured after birth).

Species: Mouse
Dose: 50 MG/KG
Route of Application: Oral
Exposure Time: (8-12D PREG)

Result: Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).

Species: Mouse

Dose: 1729 UG/KG

Route of Application: Subcutaneous

Exposure Time: (16D PREG)

Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord). Maternal Effects: Uterus, cervix, vagina.

Species: Mouse

Dose: 7890 UG/KG

Route of Application: Subcutaneous

Exposure Time: (12D PREG)

Result: Effects on Newborn: Live birth index (# fetuses per litter; measured after birth). Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Species: Pig

Dose: 1003 MG/KG

Route of Application: Oral

Exposure Time: (1-16W PREG)

Result: Effects on Newborn: Growth statistics (e.g., reduced weight gain). Effects on Newborn: Weaning or lactation index (e.g., # alive at weaning per # alive at day 4).

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Selenites

UN#: 2630

Class: 6.1

Packing Group: Packing Group I

Hazard Label: Toxic substances.

PIH: Not PIH

IATA

Proper Shipping Name: Selenites

IATA UN Number: 2630

Hazard Class: 6.1

Packing Group: I

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: T+-N

Indication of Danger: Very toxic. Dangerous for the environment.

R: 23-28-31-43-51/53

Risk Statements: Toxic by inhalation. Very toxic if swallowed. Contact with acids liberates toxic gas. May cause sensitization by skin contact. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S: 28-36/37-45-61

Safety Statements: After contact with skin, wash immediately with plenty of water. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Highly Toxic (USA) Very Toxic (EU).

Dangerous for the environment.

Risk Statements: Toxic by inhalation. Very toxic if swallowed. Contact with acids liberates toxic gas. Risk of serious damage to eyes. May cause sensitization by skin contact. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets.

US Statements: Target organ(s): Liver. Blood.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes

NOTES: This product is subject to SARA section 313 reporting requirements.

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2009 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.