

Material Safety Data Sheet

Selenium, powder, 99.5+%, 200 mesh

ACC# 52770

Section 1 - Chemical Product and Company Identification

MSDS Name: Selenium, powder, 99.5+%, 200 mesh

Catalog Numbers: AC198070000, AC198070500, AC198072500

Synonyms: None

Company Identification:

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01

For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7782-49-2	Selenium	99.5	231-957-4

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: dark gray to black solid.

Toxic. Warning! Causes eye irritation. May be absorbed through intact skin. May be harmful if swallowed. May cause skin irritation. May cause digestive tract irritation. May cause respiratory tract irritation. May cause blood abnormalities. May cause nervous system effects. May cause liver and kidney damage. May cause adverse reproductive effects based upon animal studies.

Target Organs: Blood, kidneys, liver, spleen, nervous system.

Potential Health Effects

Eye: Causes eye irritation. May result in corneal injury. May cause pink, puffy eyelids due to an allergic reaction.

Skin: May cause skin irritation. Prolonged and/or repeated contact may cause irritation and/or dermatitis. May be absorbed through the skin. Contact with the skin may cause the skin to appear to be blue and the nails brittle and yellow.

Ingestion: May cause irritation of the digestive tract. May cause liver and kidney damage. May be harmful if swallowed. May cause alopecia (loss of hair). May cause spleen damage. May cause blood abnormalities. Effects may be delayed. May cause garlic smell on the breath and body.

Inhalation: Causes respiratory tract irritation. May cause effects similar to those described for ingestion. May produce anemia, leucocytosis (increase in the white blood cell count), cloudy swelling and fatty degeneration of the viscera.

Chronic: Prolonged or repeated skin contact may cause dermatitis. May cause reproductive and fetal effects. Chronic exposure to selenium may cause central nervous system effects, digestive tract disturbances, pallor, garlic breath, Chronic exposure to selenium may cause pallor, garlic breath, metallic taste, anemia, liver and spleen damage. Chronic selenium poisoning is characterized by loss of hair and nails, skin lesions, and abnormalities of the nervous system.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use extinguishing media appropriate to the surrounding fire. Substance is noncombustible.

Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. Use water spray, dry chemical, carbon dioxide, or chemical foam.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid contact with skin and eyes. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Selenium	0.2 mg/m ³ TWA	0.2 mg/m ³ TWA 1 mg/m ³ IDLH	0.2 mg/m ³ TWA

OSHA Vacated PELs: Selenium: 0.2 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Appearance: dark gray to black

Odor: Not available.

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 690 deg C

Freezing/Melting Point: 220-222C

Decomposition Temperature: Not available.

Solubility: Insoluble in water

Specific Gravity/Density: Not available.

Molecular Formula: Se

Molecular Weight: 78.96

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, dust generation, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents, acids, metal oxides, carbides, fluorine, oxygen, potassium.

Hazardous Decomposition Products: Irritating and toxic fumes and gases, selenium/selenium oxides.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 7782-49-2: VS7700000

LD50/LC50:

CAS# 7782-49-2:

Oral, rat: LD50 = 6700 mg/kg;

Carcinogenicity:

CAS# 7782-49-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Available animal data are insufficient to allow an evaluation of the carcinogenicity of selenium compounds.

Teratogenicity: No information available.

Reproductive Effects: orl-mus TDLO: 134 mg/kg (multi-generations)

Mutagenicity: ori-mus TDLO: 480 mg/kg/60D-C

Neurotoxicity: No information available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. algae: IC50 (72h): 38 mg/l daphnia: EC50 (48h): >100 mg/l fish: LC50 (96h): >100 mg/l

Environmental: Degradation studies. Bacillus megaterium isolated from soil will oxidise elemental selenium to selenite and traces of selenate.

Physical: No information available.

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	SELENIUM COMPOUND, N.O.S.	SELENIUM COMPOUND, N.O.S.
Hazard Class:	6.1	6.1
UN Number:	UN3283	UN3283
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 7782-49-2 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

Section 313

This material contains Selenium (CAS# 7782-49-2, 99.5%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. CAS# 7782-49-2 is listed as a Priority Pollutant under the Clean Water Act. CAS# 7782-49-2 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7782-49-2 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T

Risk Phrases:

R 23/25 Toxic by inhalation and if swallowed.

R 33 Danger of cumulative effects.

R 53 May cause long-term adverse effects in the aquatic environment.

Safety Phrases:

- S 20/21 When using do not eat, drink or smoke.
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S 28A After contact with skin, wash immediately with plenty of water
- .
- S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 7782-49-2: 2

Canada - DSL/NDSL

CAS# 7782-49-2 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1B, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 7782-49-2 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information
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MSDS Creation Date: 4/07/1999

Revision #4 Date: 6/15/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.