

**Safety Data Sheet**

acc. to OSHA HCS

Printing date 01/23/2014

Reviewed on 08/03/2011

**1 Identification****Product identifier****Product name:** Selenium Ingot/button**Stock number:** 45115**CAS Number:**  
7782-49-2**EC number:**  
231-957-4**Index number:**  
034-001-00-2**Relevant identified uses of the substance or mixture and uses advised against.****Identified use:** SU24 Scientific research and development**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**Alfa Aesar, A Johnson Matthey Company  
Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

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**Information Department:** Health, Safety and Environmental Department**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

**2 Hazard(s) identification****Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

STOT RE 2 H373 May cause damage to the liver and the reproductive system through prolonged or repeated exposure. Route of exposure: Oral.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

T; Toxic

R23/25: Toxic by inhalation and if swallowed.

R33-53: Danger of cumulative effects. May cause long-term adverse effects in the aquatic environment.

**Information concerning particular hazards for human and environment:** Not applicable**Hazards not otherwise classified** No information known.**Label elements****Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labeled according to the CLP regulation.

**Hazard pictograms**

GHS06



GHS08

**Signal word** Danger**Hazard statements**

H301+H331 Toxic if swallowed or if inhaled.

H373 May cause damage to the liver and the reproductive system through prolonged or repeated exposure. Route of exposure: Oral.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...  
 P321 Specific treatment (see on this label).  
 P405 Store locked up.  
 P501 Dispose of contents/container in accordance with local/regional/national/  
 international regulations.

**WHMIS classification**

D1A - Very toxic material causing immediate and serious toxic effects

**Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1	Health (acute effects) = 1
FIRE	0	Flammability = 0
REACTIVITY	0	Physical Hazard = 0

**Other hazards****Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

**3 Composition/information on ingredients****Chemical characterization: Substances****CAS# Description:**

7782-49-2 Selenium

**Identification number(s):**

EC number: 231-957-4

Index number: 034-001-00-2

**4 First-aid measures****Description of first aid measures****General information**

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing has been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

No special measures required.

**After inhalation** Seek medical treatment in case of complaints.**After skin contact** Generally the product does not irritate the skin.**After eye contact**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

**After swallowing** Do not induce vomiting; immediately call for medical help.**Information for doctor****Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**5 Fire-fighting measures****Extinguishing media****Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

**Special hazards arising from the substance or mixture**

If this product is involved in a fire, the following can be released:

Selenium dioxide (SeO<sub>2</sub>)**Advice for firefighters****Protective equipment:** No special measures required.**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures** Not required.**Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.

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Do not allow product to reach sewage system or any water course.  
Do not allow to penetrate the ground/soil.

**Methods and material for containment and cleaning up:**

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

**Prevention of secondary hazards:** No special measures required.

**Reference to other sections**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage****Handling****Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

**Information about protection against explosions and fires:**

The product is not flammable

No special measures required.

**Conditions for safe storage, including any incompatibilities****Storage**

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

**Additional information about design of technical systems:** No further data; see section 7.

**Control parameters****Components with limit values that require monitoring at the workplace:****7782-49-2 Selenium (100.0%)**

PEL (USA)	Long-term value: 0.2 mg/m <sup>3</sup> as Se
REL (USA)	Long-term value: 0.2 mg/m <sup>3</sup> as Se
TLV (USA)	Long-term value: 0.2 mg/m <sup>3</sup> as Se
EL (Canada)	Long-term value: 0.1 mg/m <sup>3</sup>
EV (Canada)	Long-term value: 0.2 mg/m <sup>3</sup>

**Additional information:** No data

**Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Store protective clothing separately.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:**

Not required.

Use self-contained respiratory protective device in emergency situations.

**Protection of hands:** Not required.

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

<b>Form:</b>	Solid in various forms
<b>Color:</b>	Various colors
<b>Odor:</b>	Odorless

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Odor threshold: Not determined.

pH-value: Not applicable.

**Change in condition**

Melting point/Melting range: 217 °C (423 °F)

Boiling point/Boiling range: 685 °C (1265 °F)

Sublimation temperature / start: Not determined

Flammability (solid, gaseous) Not determined.

Ignition temperature: Not determined

Decomposition temperature: Not determined

Auto igniting: Not determined.

Danger of explosion: Not determined.

**Explosion limits:**

Lower: Not determined

Upper: Not determined

Vapor pressure: Not applicable.

Density at 20 °C (68 °F): 4.28 g/cm<sup>3</sup> (35.717 lbs/gal)

Relative density Not determined.

Vapor density Not applicable.

Evaporation rate Not applicable.

**Solubility in / Miscibility with**

Water: Insoluble

Partition coefficient (n-octanol/water): Not determined.

**Viscosity:**

dynamic: Not applicable.

kinematic: Not applicable.

Other information No further relevant information available.

**10 Stability and reactivity****Reactivity** No information known.**Chemical stability** Stable under recommended storage conditions.**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known**Hazardous decomposition products:** Selenium dioxide (SeO<sub>2</sub>)**11 Toxicological information****Information on toxicological effects****Acute toxicity:**

Fatal if inhaled.

Fatal if swallowed.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

**LD/LC50 values that are relevant for classification:**

Oral | LD50 | 6700 mg/kg (rat)

**Skin irritation or corrosion:** No irritant effect.**Eye irritation or corrosion:** No irritant effect.**Sensitization:** No sensitizing effects known.**Germ cell mutagenicity:** No effects known.**Carcinogenicity:**

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

IARC-3: Not classifiable as to carcinogenicity to humans.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.

**Reproductive toxicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.

**Specific target organ system toxicity - repeated exposure:**

May cause damage to the liver and the reproductive system through prolonged or repeated exposure. Route of exposure: Oral.

**Specific target organ system toxicity - single exposure:** No effects known.**Aspiration hazard:** No effects known.**Subacute to chronic toxicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

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**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**12 Ecological information****Toxicity**

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability** No further relevant information available.

**Behavior in environmental systems:**

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

**Additional ecological information:****General notes:**

Do not allow product to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

Danger to drinking water if even small quantities leak into the ground.

May cause long lasting harmful effects to aquatic life.

Avoid transfer into the environment.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

**13 Disposal considerations****Waste treatment methods**

**Recommendation** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

Not a hazardous material for transportation.

<b>UN-Number</b>	
DOT, ADR, IMDG, IATA	None
<b>UN proper shipping name</b>	
DOT, ADR, IMDG, IATA	None
<b>Transport hazard class(es)</b>	
DOT, ADR, IMDG, IATA	
Class	None
<b>Packing group</b>	
DOT, ADR, IMDG, IATA	None
<b>Environmental hazards:</b>	Not applicable.
<b>Special precautions for user</b>	Not applicable.
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	Not dangerous according to the above specifications.
<b>DOT</b>	
<b>Marine Pollutant (DOT):</b>	No

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

**SARA Section 313 (specific toxic chemical listings)**

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**California Proposition 65****Prop 65 - Chemicals known to cause cancer** Substance is not listed.**Prop 65 - Developmental toxicity** Substance is not listed.**Prop 65 - Developmental toxicity, female** Substance is not listed.**Prop 65 - Developmental toxicity, male** Substance is not listed.**Information about limitation of use:**

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**Other regulations, limitations and prohibitive regulations****Substances of very high concern (SVHC) according to REACH, Article 57**

Substance is not listed.

**REACH - Pre-registered substances** Substance is listed.**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**16 Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Health, Safety and Environmental Department.**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organization

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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