

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name

Crude Selenium

Product no.

-

REACH registration number

01-2119981706-25-XXXX

Other means of identification

EC# 231-957-4, CAS# 7782-49-2

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture

Raw material in chemical industry.

Uses advised against

-

The full text of any mentioned and identified use categories are given in section 16

1.3. Details of the supplier of the safety data sheet

Company and address

Boliden Harjavalta

Box 60

FI-29200 Pori

Finland

Tel +358 2 5358 111

Contact person**E-mail**

info.harjavalta@boliden.com

SDS date

08-03-2018

SDS Version

1.0

1.4. Emergency telephone number

999 (or 111 for non-emergency medical advice). Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department or the NHS enquiry service). See section 16.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Acute. Tox. 3; H301 + H331

STOT RE 2; H373

Aquatic Chronic 4; H413

See full text of H-phrases in section 2.2.

According to EC-Regulation 1907/2006 (REACH)

2.2. Label elements

Hazard pictogram(s)



Signal word

Danger!

Hazard statement(s)

Toxic if swallowed or if inhaled. (H301 + H331)

May cause damage to organs through prolonged or repeated exposure. (H373)

May cause long lasting harmful effects to aquatic life. (H413)

General

Prevention

-

Do not breathe dust. (P260).

Wash hands/exposed areas/exposed skin/hands and exposed skin thoroughly after handling. (P264).

Avoid release to the environment. (P273).

Wear protective clothing/protective gloves/eye protection/face protection. (P280).

Safety

statement(s)

Response

Call a POISON CENTER/doctor if you feel unwell. (P312).

Get medical advice/attention if you feel unwell. (P314).

Specific treatment (see on this label). (P321).

Take off immediately all contaminated clothing. (P361).

IF SWALLOWED: Immediately call a POISON CENTER/doctor. (P301+P310).

Storage

Disposal

-

Dispose of contents/container to an approved waste disposal plant. (P501).

Identity of the substances primarily responsible for the major health hazards

selenium. Index-no.: 034-001-00-2

2.3. Other hazards

-

Additional labelling

-

Additional warnings

-

VOC

-

SECTION 3: Composition/information on ingredients

3.1. Substances

NAME:	selenium
IDENTIFICATION NOS.:	CAS-no: 7782-49-2 EC-no: 231-957-4 REACH-no: 01-2119981706-25 Index-no: 034-001-00-2
CONTENT:	>99,5%
CLP CLASSIFICATION:	Acute Tox. 3, STOT RE 2, Aquatic Chronic 4 H301, H331, H373, H413

3.2. Mixtures

-

(*) See full text of H-phrases in chapter 16. Occupational exposure limits are listed in section 8, if these are available.

Other informations

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

Remove affected person from danger area, lay him down. Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing. In case of accident or if you feel unwell, seek medical advice immediately. If the patient is likely to become unconscious, place and transport in stable sideways position.

Inhalation

Get the injured person into fresh air. Make sure there is always someone with the injured person. Prevent shock by keeping the injured person warm and calm. If the person stops breathing, give mouth-to-mouth resuscitation. If unconscious, roll the injured person onto side with the top leg bent at both knee and hip. Call an ambulance.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap.

Eye contact

Remove contact lenses. Flush eyes immediately with plenty of water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. If irritation continues, contact a doctor.

Ingestion

In the case of ingestion, contact a doctor immediately and take this safety data sheet or the label from the material with you.

4.2. Most important symptoms and effects, both acute and delayed

No special

4.3. Indication of any immediate medical attention and special treatment needed

-

Information to medics

Bring this safety data sheet.

SECTION 5: Firefighting measures**5.1. Extinguishing media**

Sand; Metal fire powders

5.2. Special hazards arising from the substance or mixture

In case of combustion evolution of dangerous gases possible. Formation of explosive mixtures with air is possible.

5.3. Advice for firefighters

Fire residues and contaminated firefighting water must be disposed off in accordance with the local regulations. Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Keep people away and stay on the upwind side. Avoid dust formation. Use breathing apparatus if exposed to vapours/dust/aerosol.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of a leakage to the surroundings, contact the local environmental authorities. Consider putting up waste collecting trays/basins to prevent leakage to the surroundings.

6.3. Methods and material for containment and cleaning up

Sweep up spills carefully. Use water sprays or ventilated evacuation systems to prevent dust. Take up mechanically. Send in suitable containers for recovery or disposal.

6.4. Reference to other sections

See section 13 on "Disposal considerations" with regard to the handling of waste. See section 8 on 'Exposure controls/personal protection' for protective measures.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Advice on safe handling:

Provide good ventilation of working area (local exhaust ventilation, if necessary). Avoid the formation and deposition of dust. If workplace exposure limits are exceeded, respiratory protection approved for this particular job must be worn.

General protective and hygiene measures:

Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Wash hands before breaks and after work. Do not inhale dust. Store work clothing separately. Avoid contact with eyes and skin. Provide eye wash fountain in work area. Have emergency shower available.

Advice on protection against fire and explosion:

Avoid formation of dust. Keep away from sources of heat and ignition.

7.2. Conditions for safe storage, including any incompatibilities

Store product in closed containers. Keep only in the original container.

Do not store together with foodstuffs. Do not store together with: Reducing agents

Storage temperature

Additional information for selenic acid pellets: Store in a cool place with an ambient temperature of < 30°C

7.3. Specific end use(s)

This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****OEL**

selenium

Long-term exposure limit (8-hour TWA reference period): - ppm | 0,1 mg/m³

DNEL / PNEC

DNEL (selenium): Worker, Dermal, 7 mg/kg/day - Duration: Long term – Systemic effects

DNEL (selenium): Worker, Inhalation, 0,05 mg/m³ - Duration: Long term – Systemic effects

DNEL (selenium): Consumer, Oral, 4,3 µg/kg/day - Duration: Long term – Systemic effects

DNEL (selenium): Consumer, Dermal, 4,3 mg/kg/day - Duration: Long term – Systemic effects

DNEL (selenium): Consumer, Inhalation, 0,015 mg/m³ - Duration: Long term – Systemic effects

PNEC (selenium): ecological compartment: Water, Type: Fresh water, Value: 2,67 µg/l

PNEC (selenium): ecological compartment: Water, Type: Marine water, Value: 2 µg/l

PNEC (selenium): ecological compartment: Water, Type: Aqua intermittent, Value: 5,5 µg/l

PNEC (selenium): ecological compartment: Water, Type: Fresh water sediment, Value: 8,2 mg/kg dry weight

PNEC (selenium): ecological compartment: Water, Type: Marine water sediment, Value: 6,2 mg/kg dry weight

PNEC (selenium): ecological compartment: Soil, Type: -, Value: 0,1 mg/kg dry weight

PNEC (selenium): ecological compartment: Sewage treatment plant, Type: -, Value: 1500 µg/l

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

General recommendations

Observe general occupational hygiene.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values.

Appropriate technical measures

Take ordinary precautions when using the product. Avoid inhalation of gas or dust.

Hygiene measures

Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face.

According to EC-Regulation 1907/2006 (REACH)

Measures to avoid environmental exposure

Keep damming materials near the workplace. If possible collect spillage during work.

Individual protection measures, such as personal protective equipment



Generally

Only CE-marked personal protection equipment should be used.

Respiratory Equipment

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. Short term: filter apparatus, Filter P3

Skin protection

Special work clothing should be used. When working with this product for a long period of time, use a protective suit. Acid-resistant protective clothing.

Hand protection

Chemical resistant gloves (EN 374)
Appropriate Material: Neoprene

Eye protection

Tightly fitting safety glasses (EN 166).

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Colour	Odour	pH	Viscosity	Relative density
Powder	Grey to black	Odourless	No data available	No data available	4,809

Phase changes

Melting point (°C)	Boiling point (°C)	Vapour pressure (Pa)
220,8	685	0,1333

Data on fire and explosion hazards

Flashpoint (°C)	Ignition (°C)	Self ignition (°C)
Not applicable	-	- Product is not selfigniting (EG A.16)
Explosion limits (Vol %)	Oxidizing properties	Flammability
No data available	Not applicable	The product is NOT highly flammable according to Regulation (EG) Nr. 440/2008 , method EC A.10 (flammability, solids)

Solubility

Solubility in water	n-octanol/water coefficient
Soluble	-
3,774 µg/l (21,2°C)	

9.2. Other information

Solubility in fat	Additional information
-	Decomposition point: No data available Explosive properties: Not applicable Vapour density: No data available Evaporation rate: No data available Density: No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable at ambient temperature.

10.2. Chemical stability

The product is stable under the conditions, noted in the section on "Handling and storage".

According to EC-Regulation 1907/2006 (REACH)

10.3. Possibility of hazardous reactions

No special

10.4. Conditions to avoid

Very strong heating in air may cause combustion with the formation of toxic fumes.

10.5. Incompatible materials

With sufficiently strong reduction agents very toxic hydrogen selenide can be formed.

10.6. Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance

selenium

Species

Rat

Test

LD50 (OECD 401)

Route of exposure

Oral

Result

>5000 mg/kg bw

selenium

Rat

LC50 (dust, OPP 81-3)

Inhalation

>5,67 mg/l, 4h

Toxicity values do not meet the classification criteria of annex VI of regulation (EC) No 1272/2008, but have been taken into account in the CSR.

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Non-sensitizing.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

No data available.

STOT-repeated exposure

Data on substance: selenium

Oral, rat

NOAEL: 0,4 mg/kg bw/d

May cause damage to organs.

Aspiration hazard

No data available.

Long term effects

No special

SECTION 12: Ecological information

12.1. Toxicity

Overview of reliable acute toxicity data:

Species	Parameter	Endpoint ⁽¹⁾	Value (µg Se/L)	Reliability Score	Reference
Fish					
<i>P.promelas</i>	Mortality	96h-LC ₅₀	2060-5190	2	Cardwell et al, 1976
<i>P.promelas</i>	Mortality	96h-LC ₅₀	6210-42100	2	Brix et al, 2001
<i>I.punctatus</i>	Mortality	96h-LC ₅₀	12950	2	Cardwell et al, 1976
<i>C.auratus</i>	Mortality	96h-LC ₅₀	26050	2	Cardwell et al, 1976
<i>L. macrochirus</i>	Mortality	96h-LC ₅₀	28460	2	Cardwell et al, 1976
Invertebrates					
<i>D.magna</i>	Mortality	48h-LC ₅₀	550-2840	2	Maier et al, 1993
<i>D.magna</i>	Mortality	48h-LC ₅₀	1790-4070	2	Ingersoll et al, 1990
<i>D.magna</i>	Mortality	48h-LC ₅₀	1120	2	Kimball, 1978
Algae					
<i>P.subcapitata</i>	Growth rate	72h-E _r C ₅₀	44240	2	LISEC, 1992
<i>C.reinhardtii</i>	Growth	96h-E _b C ₅₀	6320	2	Morlon et al, 2005
<i>C.reinhardtii</i>	Growth	96h-E _b C ₅₀	355	2	Geoffroy et al, 2007
<i>C.reinhardtii</i>	Growth	96h-E _b C ₅₀	240	2	Fournier et al, 2010
<i>M.aeruginosa</i>	Growth	96h-E _b C ₅₀	2680	2	Zhou et al, 2017

Ecotoxicity values do not meet the classification criteria of annex VI of regulation (EC) No 1272/2008, but have been taken into account in the CSR.

Bacteria toxicity

No data available.

12.2. Persistence and degradability

Substance

Biodegradability

Test

Result

Not applicable

12.3. Bioaccumulative potential

Substance

Potential bioaccumulation

LogPow

BFC

No data available.

944

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

The PBT and vPvB criteria do not apply to inorganic substances.

12.6. Other adverse effects

No data available.

12.7. Other information

Do not discharge into the drains or waters and do not store on public depositories.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The product is covered by the regulations on dangerous waste.

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

Waste

EWC code

-

Specific labelling

-

According to EC-Regulation 1907/2006 (REACH)

Contaminated packing

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed of in agreement with the regional waste disposal company.

SECTION 14: Transport information

Not listed as dangerous goods under ADR and IMDG regulations.

14.1 – 14.4

ADR/RID

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

Notes

Tunnel restriction code

IMDG

UN-no.

Proper Shipping Name

Class

PG*

EmS

MP**

Hazardous constituent

IATA/ICAO

UN-no.

Proper Shipping Name

Class

PG*

14.5. Environmental hazards

-

14.6. Special precautions for user

-

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available

(*) Packing group

(**) Marine pollutant

SECTION 15: Regulatory information

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

Restrictions for application

People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC. Only for industrial use.

Demands for specific education

-

Additional information

-

Sources

EC regulation 1907/2006 (REACH)

Directive 2000/532/EC

EC Regulation 1272/2008 (CLP)

EH40/2005

15.2. Chemical safety assessment

Yes

SECTION 16: Other information**Updates**

Section 12.1. Toxicity data updated according to consortium information.

Section 14 Transportation information: Based on updated toxicity data transportation classification removed.

Full text of H-phrases as mentioned in section 3

H301 - Toxic if swallowed.

H331 - Toxic if inhaled.

H373 - May cause damage to organs through prolonged or repeated exposure.

H413 - May cause long lasting harmful effects to aquatic life.

The full text of identified uses as mentioned in section 1

-

Other symbols mentioned in section 2

-

Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

Emergency Numbers

Austria: Poison Control Centre Emergency helpline +43 1 406 43 43, 112

Belgium: 070 - 245 245

Bulgaria: +359 2 9154 409

Czech Republic: Toxikologické informační středisko Telefon: +420 224 919 293, +420 224 915 402

Denmark: Kontakt Giftlinien på tlf.nr.: 82 12 12 12 (åbent 24 timer i døgnet).

Estonia: 112, 16662, ((+372) 626 93 90)

Finland: 09-4711/Myrkytystietokeskus tai suora numero 09-471977 Myrkytystietokeskus/HUS, Tukholmankatu 17, 00029 HUS (Helsinki) 112

France: ORFILA (INRS) : + 33 (0)1 45 42 59 59. 24 heures sur 24 et 7 jours sur 7

Germany: Giftnotruf Berlin, Emergency telephone: +49 30 19240 (Tag und Nacht)

Greece: +30 10 779 3777

Hungary: Telefon: 06-80-20-11-99

Iceland: Neyðarlínan: Sími 112. Eitrunarmiðstöð Landsspítalans. Sími: 543 2222.

Ireland: +353 1 8379964

Italy: Centro antiveleni di Roma - Policlinico Umberto I tel. 06-49978000

Latvia: +371 704 2468

Lithuania: Visuomenės sveikatos centrams +370 5 236 20 52 arba +370 687 53378

Malta: 2425 0000

Netherlands: 30-2748888

Norway: Giftinformasjonsentralen på tlf.nr.: 22 59 13 00, 113

Poland: +48 58301 65 16 / +48 58 349 2831

Portugal: Em caso de intoxicação, ligue 808 250 143

Romania: +40 21 3183606

Slovakia: +421 2 54 77 4166

Slovenia: + 386 41 650500

Spain: Servicio de Información Toxicológica Teléfono: + 34 91 562 04 20 (solo emergencias toxicológicas) Información en español (24h/365 días)

Sweden: 112, 08-331231 (vardagar kl 9-17)

United Kingdom: 999 (or 111 for non-emergency medical advice). Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department or the NHS enquiry service)

**Date of last essential change
(First cipher in SDS version)**

-

According to EC-Regulation 1907/2006 (REACH)

**Date of last minor change
(Last cipher in SDS version)**

-

ALPHAOMEGA. Licens nr.:3006391789, Explizit AB f./Boliden Group
www.chymeia.com