

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Selenium R for analysis, Reag. Ph. Eur.

Revision date: 31.10.2023

Product code: 27783

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

1.1. Product identifier

Selenium R for analysis, Reag. Ph. Eur.

CAS No: 7782-49-2
Index No: 034-001-00-2
EC No: 231-957-4

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

Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name: AnalytiChem GmbH
Street: Stempelstraße 6
Place: D-47167 Duisburg
Telephone: 0203/5194-0
E-mail: info@analytichem.de
Contact person: Abteilung Produktsicherheit
E-mail: produktsicherheit@analytichem.de
Internet: www.analytichem.de
Responsible Department: Abteilung Produktsicherheit
Telefax: 0203/5194-290
Telephone: 0203/5194-107/117

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute Tox. 3; H331
Acute Tox. 3; H301
STOT RE 2; H373
Aquatic Chronic 4; H413

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:



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Hazard statements

H301+H331 Toxic if swallowed or if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.
H413 May cause long lasting harmful effects to aquatic life.

Precautionary statements

P273 Avoid release to the environment.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308 IF exposed or concerned:
P310 Immediately call a POISON CENTER/doctor.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: Se
Molecular weight: 78,96 g/mol

Relevant ingredients

CAS No	Chemical name	Quantity
	EC No	Index No
	REACH No	
	Classification (Regulation (EC) No 1272/2008)	
7782-49-2	selenium	100 %
	231-957-4	034-001-00-2
	Acute Tox. 3, Acute Tox. 3, STOT RE 2, Aquatic Chronic 4; H331 H301 H373 H413	

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
7782-49-2	231-957-4	selenium	100 %
	inhalation: ATE = 3 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists); oral: ATE = 100 mg/kg		

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Self-protection of the first aider

After inhalation

Provide fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Call a physician immediately.

After contact with skin

Take off immediately all contaminated clothing and wash it before reuse.
Call a physician immediately.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

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Remove contact lenses, if present and easy to do. Continue rinsing.
Protect uninjured eye.

After ingestion

Rinse mouth immediately and drink plenty of water.
Call a physician immediately.

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

Dizziness, Headache
Cardiac arrhythmias, Circulatory collapse
Dyspnoea, Unconsciousness

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

Give sodium sulfate as laxative (1 tablespoon in 1 glass of water) with plenty of activated coal.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible solids
Danger of dust explosion.
Hazardous combustion products
In case of fire may be liberated:
Metal oxide smoke, toxic

5.3. Advice for firefighters

Do not inhale explosion and combustion gases.
Avoid contact with skin, eyes and clothes.
In case of fire: Wear self-contained breathing apparatus.

Additional information

Suppress gases/vapours/mists with water spray jet.
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Move undamaged containers from immediate hazard area if it can be done safely.
Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Provide adequate ventilation.
Use personal protection equipment.
Avoid contact with skin, eyes and clothes.
Remove persons to safety.
Emergency procedures
Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.

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Prevent spread over a wide area (e.g. by containment or oil barriers).
Collect in closed and suitable containers for disposal.
Take up carefully when dry. Take up dust-free and set down dust-free.

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Read label before use. Handle and open container with care.
Avoid dust formation. Do not breathe dust.
When using do not eat, drink, smoke, sniff. Keep container tightly closed.
Use personal protection equipment. Use extractor hood (laboratory).
Provide adequate ventilation. Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs. Make available sufficient washing facilities
Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.
Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Further information on handling

Draw up and observe skin protection programme.
Wash hands and face before breaks and after work and take a shower if necessary.
Take off immediately all contaminated clothing and wash it before reuse.
If handled uncovered, arrangements with local exhaust ventilation have to be used.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store in a well-ventilated place. Keep container tightly closed.
Store in a place accessible by authorized persons only.

Further information on storage conditions

Store in a dry place.

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m ³	fib/cm ³	Category	Origin
7782-49-2	Selenium	-	0.1		TWA (8 h)	

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DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
7782-49-2	selenium		
Worker DNEL, long-term	inhalation	systemic	0,05 mg/m ³
Worker DNEL, long-term	dermal	systemic	7 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	0,015 mg/m ³
Consumer DNEL, long-term	dermal	systemic	4,3 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	0,0043 mg/kg bw/day

PNEC values

CAS No	Substance	
Environmental compartment	Value	
7782-49-2	selenium	
Freshwater	0,00267 mg/l	
Freshwater (intermittent releases)	0,0055 mg/l	
Marine water	0,002 mg/l	
Freshwater sediment	8,2 mg/kg	
Marine sediment	6,2 mg/kg	
Secondary poisoning	1 mg/kg	
Micro-organisms in sewage treatment plants (STP)	1,5 mg/l	
Soil	0,1 mg/kg	

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Avoid dust formation. Do not breathe dust.

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles

Wear eye/face protection.

Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

Trade name/designation KCL 741 Dermatril® L
Suitable material: NBR (Nitrile rubber) 0,11 mm
Wearing time with permanent contact: > 480 min

Trade name/designation KCL 741 Dermatril® L
Suitable material: NBR (Nitrile rubber) 0,11 mm
Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet (>, <) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves

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(e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Wear suitable protective clothing.
Take off immediately all contaminated clothing.
Wash hands before breaks and after work.

Respiratory protection

Respiratory protection necessary at: dust formation
Filtering device with filter or ventilator filtering device of type: P3

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	solid	
Colour:	dark grey	
Odour:	odourless	
Odour threshold:	No data available	
Melting point/freezing point:		217 °C
Boiling point or initial boiling point and boiling range:		685 °C
Flammability:		No data available
Lower explosion limits:		No data available
Upper explosion limits:		No data available
Flash point:		No data available
Auto-ignition temperature:		No data available
Decomposition temperature:		No data available
pH-Value:		No data available
Viscosity / kinematic:		No data available
Water solubility:		No data available
Solubility in other solvents		No data available
Dissolution rate:		No data available
Partition coefficient n-octanol/water:		No data available
Dispersion stability:		No data available
Vapour pressure:		<1 hPa
(at 20 °C)		
Vapour pressure:		No data available
Density (at 20 °C):		4,28 g/cm ³
Relative density:		No data available
Bulk density:		1270 kg/m ³
Relative vapour density:		No data available
Particle characteristics:		No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties	
No data available	
Sustaining combustion:	No data available
Self-ignition temperature	
Solid:	>400 °C
Gas:	No data available
Oxidizing properties	
No data available	

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Other safety characteristics

Evaporation rate:	No data available
Solvent separation test:	No data available
Solvent content:	No data available
Solid content:	100%
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
No data available:	
Viscosity / dynamic:	No data available
Flow time:	No data available

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Danger of dust explosion.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Danger of explosion:

Metal, Oxygen

Amide, Cadmium, Potassium, Sodium, Sodiumperoxide, Zn

Ignition hazard: Carbide, Fluorine, peroxides, for example hydrogen peroxide, uranium

Possibility of hazardous reactions: Hydrochloric acid, sulphuric acid

Exothermic reaction with: Aluminium hydroxide gel, Metal powder
beryllium, Potassium chlorate

nickel, Oxidising agent

White/yellow phosphor, Nitric acid

Alkali metals

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition products

In case of fire may be liberated:

SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicokinetics, metabolism and distribution

No data available

Acute toxicity

Toxic if swallowed.

Toxic if inhaled.

Pulmonary oedema

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7782-49-2	selenium				
	oral	ATE 100 mg/kg			
	inhalation vapour	ATE 3 mg/l			
	inhalation dust/mist	ATE 0,5 mg/l			

Irritation and corrosivity

Based on available data, the classification criteria are not met. slightly irritant but not relevant for classification.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information

No data available

Further information

Dizziness, Headache

Cardiac arrhythmias, Circulatory collapse

Dyspnoea, Unconsciousness

SECTION 12: Ecological information

12.1. Toxicity

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
7782-49-2	selenium					
	Acute fish toxicity	LC50 mg/l	2,06	96 h	Pimephales promelas	Archives of Environmental Contamination
	Acute algae toxicity	ErC50	45 mg/l	96 h	Dunaliella viridis	Environmental Toxicology and Chemistry 2 other: EPA 600/491002: Short-term method
	Acute crustacea toxicity	EC50 mg/l	0,55	48 h	Daphnia magna	Environmental Toxicology and Chemistry 1 other: EPA-660/3-75-00 9: Methods for Acu
	Fish toxicity	NOEC mg/l	0,33	60 d	Lepomis macrochirus	Aquatic Toxicology 27, 265-279 (1993) Juvenile fish were exposed for 60 days t
	Algae toxicity	NOEC mg/l	1,03	10 d	Anabaena flos-aquae	Archives of Environmental Contamination 10-d experiment on the toxicity of selen
	Crustacea toxicity	NOEC	0,1 mg/l	24 d	Hyalella azteca	Publication (1993) In this study 2-month-old Hyalella aztec

12.2. Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

BCF

CAS No	Chemical name	BCF	Species	Source
7782-49-2	selenium	< 0,61	Pimephales promelas	Arch. Environ. Conta

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

Discharge into the environment must be avoided.

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Send to a physico-chemical treatment facility under observation of official regulations.
Do not mix with other wastes.
Do not allow to enter into surface water or drains.

Contaminated packaging

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

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Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 3288
14.2. UN proper shipping name:	TOXIC SOLID, INORGANIC, N.O.S. (selenium)
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Classification code:	T5
Special Provisions:	274
Limited quantity:	5 kg
Excepted quantity:	E1
Transport category:	2
Hazard No:	60
Tunnel restriction code:	E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 3288
14.2. UN proper shipping name:	TOXIC SOLID, INORGANIC, N.O.S. (selenium)
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Classification code:	T5
Special Provisions:	274 802
Limited quantity:	5 kg
Excepted quantity:	E1

Marine transport (IMDG)

14.1. UN number or ID number:	UN 3288
14.2. UN proper shipping name:	TOXIC SOLID, INORGANIC, N.O.S. (selenium)
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Special Provisions:	223, 274
Limited quantity:	5 kg
Excepted quantity:	E1
EmS:	F-A, S-A

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 3288
14.2. UN proper shipping name:	TOXIC SOLID, INORGANIC, N.O.S. (selenium)
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Special Provisions:	A3 A5
Limited quantity Passenger:	10 kg
Passenger LQ:	Y645
Excepted quantity:	E1
IATA-packing instructions - Passenger:	670
IATA-max. quantity - Passenger:	100 kg
IATA-packing instructions - Cargo:	677
IATA-max. quantity - Cargo:	200 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS:	No
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SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 75

Information according to Directive
2012/18/EU (SEVESO III):

H2 ACUTE TOXIC

National regulatory information

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D):

2 - obviously hazardous to water

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 12.

Abbreviations and acronyms

Acute Tox: Acute toxicity

STOT RE: Specific target organ toxicity - repeated exposure

Aquatic Chronic: Chronic aquatic hazard

Relevant H and EUH statements (number and full text)

H301 Toxic if swallowed.

H301+H331 Toxic if swallowed or if inhaled.

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.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.