

# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Selenium ROTI®METIC 99,999 % (5N)

article number: **4547**  
Version: **GHS 4.0 en**  
Replaces version of: 2021-12-16  
Version: (GHS 3)

date of compilation: 2016-04-13  
Revision: 2024-03-02

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

### 1.1 Product identifier

Identification of the substance **Selenium ROTI®METIC 99,999 % (5N)**  
Article number 4547  
CAS number 7782-49-2

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

Relevant identified uses: Laboratory chemical  
Laboratory and analytical use  
Uses advised against: Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household). Food, drink and animal feeding-stuffs.

### 1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co. KG  
Schoemperlenstr. 3-5  
D-76185 Karlsruhe  
Germany

**Telephone:**+49 (0) 721 - 56 06 0  
**Telefax:** +49 (0) 721 - 56 06 149  
**e-mail:** sicherheit@carlroth.de  
**Website:** www.carlroth.de

Competent person responsible for the safety data sheet: Department Health, Safety and Environment

**e-mail (competent person):** **sicherheit@carlroth.de**

### 1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
NSW Poisons Information Centre Childrens Hospital	Hawkesbury Road	2145 Westmead, NSW	131126	

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.10	Acute toxicity (oral)	3	Acute Tox. 3	H301
3.11	Acute toxicity (inhal.)	3	Acute Tox. 3	H331
3.9	Specific target organ toxicity - repeated exposure	2	STOT RE 2	H373

For full text of abbreviations: see SECTION 16

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### The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure.

## 2.2 Label elements

### Labelling

#### Signal word

**Danger**

#### Pictograms

GHS06, GHS08



#### Hazard statements

H301+H331

Toxic if swallowed or if inhaled

H373

May cause damage to organs through prolonged or repeated exposure

#### Precautionary statements

##### **Precautionary statements - prevention**

P260

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

##### **Precautionary statements - response**

P301+P310

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

P304+P340

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P311

Call a POISON CENTER or doctor/physician

P330

Rinse mouth

##### **Precautionary statements - storage**

P403+P233

Store in a well-ventilated place. Keep container tightly closed

##### **Precautionary statements - disposal**

P501

Dispose of contents/container to industrial combustion plant

## 2.3 Other hazards

### **Results of PBT and vPvB assessment**

According to the results of its assessment, this substance is not a PBT or a vPvB.

### **Endocrine disrupting properties**

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Name of substance

Selenium

Molecular formula

Se

Molar mass

78.96 g/mol

CAS No

7782-49-2

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## SECTION 4: First aid measures

### 4.1 Description of first aid measures



#### General notes

Self-protection of the first aider.

#### Following inhalation

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

#### Following skin contact

Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following ingestion

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

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

Symptoms and effects are not known to date.

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

none

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media



#### Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings!  
water, foam, dry extinguishing powder, ABC-powder

#### Unsuitable extinguishing media

water jet

### 5.2 Special hazards arising from the substance or mixture

Non-combustible.

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures



#### For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe dust.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

### 6.3 Methods and material for containment and cleaning up

#### Advice on how to contain a spill

Covering of drains. Take up mechanically.

#### Advice on how to clean up a spill

Take up mechanically. Control of dust.

#### Other information relating to spills and releases

Place in appropriate containers for disposal.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Use extractor hood (laboratory). Avoid dust formation. Clear contaminated areas thoroughly.

#### Advice on general occupational hygiene

When using do not eat or drink. Thorough skin-cleansing after handling the product.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

#### Incompatible substances or mixtures

Observe hints for combined storage.

#### Consideration of other advice:

Store locked up.

#### Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.

#### Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

### 7.3 Specific end use(s)

No information available.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### National limit values

#### Occupational exposure limit values (Workplace Exposure Limits)

This information is not available.

### 8.2 Exposure controls

#### Individual protection measures (personal protective equipment)

##### Eye/face protection



Use safety goggle with side protection.

##### Skin protection



- **hand protection**

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

- **type of material**

NBR (Nitrile rubber)

- **material thickness**

>0,11 mm

- **breakthrough times of the glove material**

>480 minutes (permeation: level 6)

- **other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

##### Respiratory protection



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P3 (filters at least 99,95 % of airborne particles, colour code: White).

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### Environmental exposure controls

Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	solid
Form	pellets
Colour	black
Odour	odourless
Melting point/freezing point	220.8 °C at 1,013 hPa (ECHA)
Boiling point or initial boiling point and boiling range	685 °C at 1,013 hPa (ECHA)
Flammability	non-combustible
Lower and upper explosion limit	not determined
Flash point	not applicable
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	not applicable
Kinematic viscosity	not relevant
<u>Solubility(ies)</u>	
Water solubility	(poorly soluble)
<u>Partition coefficient</u>	
Partition coefficient n-octanol/water (log value):	5
Vapour pressure	not determined
<u>Density and/or relative density</u>	
Density	4.809 g/cm <sup>3</sup> at 25 °C (ECHA)
Relative vapour density	Information on this property is not available.
Particle characteristics	No data available.

### Other safety parameters

Oxidising properties none

### 9.2 Other information

Information with regard to physical hazard classes: hazard classes acc. to GHS (physical hazards): not relevant

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Other safety characteristics:

There is no additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### 10.3 Possibility of hazardous reactions

**Violent reaction with:** strong oxidiser, Alkali metals, Beryllium, Bromates, Cadmium, Chlorates, Potassium, Sodium, Nickel, Phosphorus, Platinum, Nitric acid, Oxygen, Nitrogen oxides (NOx), Tin

### 10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

### 10.5 Incompatible materials

There is no additional information.

### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Classification acc. to GHS

#### Acute toxicity

Toxic if swallowed. Toxic if inhaled.

#### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

#### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

#### Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

#### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

#### Carcinogenicity

Shall not be classified as carcinogenic.

#### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

#### Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

#### Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

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### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

### Symptoms related to the physical, chemical and toxicological characteristics

#### • If swallowed

Data are not available.

#### • If in eyes

Data are not available.

#### • If inhaled

cough

#### • If on skin

Data are not available.

#### • Other information

Cardiac arrhythmias, Headache, Dyspnoea, Unconsciousness, Vertigo, Drowsiness

### 11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxic to aquatic life with long lasting effects.

Aquatic toxicity (chronic)				
Endpoint	Value	Species	Source	Exposure time
EC50	$>3,200 \text{ mg/l}$	microorganisms	ECHA	3 h

### 12.2 Persistence and degradability

Data are not available.

### 12.3 Bioaccumulative potential

The substance fulfils the very bioaccumulative criterion.

n-octanol/water (log KOW)	5
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### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

Data are not available.

### 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

### 12.7 Other adverse effects

Data are not available.



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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Recycling/reclamation of metals and metal compounds.

#### Sewage disposal-relevant information

Do not empty into drains.

#### Waste treatment of containers/packagings

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

#### Relevant provisions relating to waste(Basel Convention)

##### Properties of waste which render it hazardous

**H6.1**      Poisonous (Acute)  
**H11**        Toxic (Delayed or chronic)

### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

## SECTION 14: Transport information

### 14.1 UN number

<b>UN RTDG</b>	UN 3288
IMDG-Code	UN 3288
ICAO-TI	UN 3288

### 14.2 UN proper shipping name

<b>UN RTDG</b>	TOXIC SOLID, INORGANIC, N.O.S.
IMDG-Code	TOXIC SOLID, INORGANIC, N.O.S.
ICAO-TI	Toxic solid, inorganic, n.o.s.
Technical name	Selenium

### 14.3 Transport hazard class(es)

<b>UN RTDG</b>	6.1
IMDG-Code	6.1
ICAO-TI	6.1

### 14.4 Packing group

<b>UN RTDG</b>	III
IMDG-Code	III

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ICAO-TI	III
<b>14.5 Environmental hazards</b>	non-environmentally hazardous acc. to the dangerous goods regulations
<b>14.6 Special precautions for user</b>	There is no additional information.
<b>14.7 Transport in bulk according to IMO instruments</b>	The cargo is not intended to be carried in bulk.

### 14.8 Information for each of the UN Model Regulations

#### Transport informationNational regulationsAdditional information(UN RTDG)

<b>UN number</b>	3288
<b>Class</b>	6.1
<b>Packing group</b>	III
<b>Danger label(s)</b>	6.1
	
<b>Special provisions (SP)</b>	223, 274 UN RTDG
<b>Excepted quantities (EQ)</b>	E1 UN RTDG
<b>Limited quantities (LQ)</b>	5 kg UN RTDG
<b>Emergency Action Code</b>	2X

#### International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name	TOXIC SOLID, INORGANIC, N.O.S.
Particulars in the shipper's declaration	UN3288, TOXIC SOLID, INORGANIC, N.O.S., (Selenium), 6.1, III
Marine pollutant	-
<b>Danger label(s)</b>	6.1
	
Special provisions (SP)	223, 274
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 kg
EmS	F-A, S-A
Stowage category	A

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### International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name	Toxic solid, inorganic, n.o.s.
Particulars in the shipper's declaration	UN3288, Toxic solid, inorganic, n.o.s., (Selenium), 6.1, III
Danger label(s)	6.1
	
Special provisions (SP)	A3, A5
Excepted quantities (EQ)	E1
Limited quantities (LQ)	10 kg

## SECTION 15: Regulatory information

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

There is no additional information.

#### National regulations(Australia)

##### Australian Inventory of Chemical Substances(AICS)

Substance is listed.

#### Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

#### National inventories

Country	Inventory	Status
AU	AIIC	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed (ACTIVE)
VN	NCI	substance is listed

#### Legend

AIIC	Australian Inventory of Industrial Chemicals
CICR	Chemical Inventory and Control Regulation
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China

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### Legend

INSQ	National Inventory of Chemical Substances
KECI	Korea Existing Chemicals Inventory
NCI	National Chemical Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

## 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

## SECTION 16: Other information

### Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$ .	yes
14.5	Environmental hazards: hazardous to the aquatic environment	Environmental hazards: non-environmentally hazardous acc. to the dangerous goods regulations	yes
14.8	Environmental hazards: Yes Hazardous to the aquatic environment		yes
14.8	Danger label(s): 6.1 Fish and tree	Danger label(s): 6.1	yes
14.8		Danger label(s): change in the listing (table)	yes
14.8		Emergency Action Code: 2X	yes
14.8	Particulars in the shipper's declaration: UN3288, TOXIC SOLID, INORGANIC, N.O.S., (Selenium), 6.1, III, MARINE POLLUTANT	Particulars in the shipper's declaration: UN3288, TOXIC SOLID, INORGANIC, N.O.S., (Selenium), 6.1, III	yes
14.8	Marine pollutant: yes (hazardous to the aquatic environment)	Marine pollutant: -	yes
14.8	Danger label(s): 6.1, "Fish and tree"	Danger label(s): 6.1	yes
14.8		Danger label(s): change in the listing (table)	yes
14.8	Environmental hazards: yes (hazardous to the aquatic environment)		yes
15.1		National inventories: change in the listing (table)	yes

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### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
UN RTDG	UN Recommendations on the Transport of Dangerous Good
vPvB	Very Persistent and very Bioaccumulative

### Key literature references and sources for data

Safe Work Australia's Code of Practice for Labelling of Workplace Hazardous Chemicals (under WHS Regulations).

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H301	Toxic if swallowed.
H331	Toxic if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.

### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.