

# Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU



## Selenium ROTI®METIC 99,999 % (5N)

article number: **4547**  
Version: **5.0 en**  
Replaces version of: 2021-12-16  
Version: (4)

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 | <b>Selenium ROTI®METIC 99,999 % (5N)</b> |
| Article number                  | 4547                                     |
| Index number in CLP Annex VI    | 034-001-00-2                             |
| EC number                       | 231-957-4                                |
| CAS number                      | 7782-49-2                                |

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

|                           |  |
|---------------------------|--|
| Relevant identified uses: | Laboratory chemical<br>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   |
|--|---------------|------------------|-----------------|---|
| National Poisons Information Centre<br>Beaumont Hospital | Beaumont Road | Dublin 9         | +353 1 809 2166 | <a href="https://www.poisons.ie/">https://www.poisons.ie/</a> |

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

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### Classification according to Regulation (EC) No 1272/2008 (CLP)

| Section | Hazard class  | Cat-egory | 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             |
| 4.1C    | Hazardous to the aquatic environment - chronic hazard | 4         | Aquatic Chronic 4         | H413             |

For full text of abbreviations: see SECTION 16

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

Delayed or immediate effects can be expected after short or long-term exposure. Spillage and fire water can cause pollution of watercourses.

## 2.2 Label elements

### Labelling according to Regulation (EC) No 1272/2008 (CLP)

#### 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  
H413 May cause long lasting harmful effects to aquatic life

#### Precautionary statements

##### Precautionary statements - prevention

P261 Avoid breathing dust

##### Precautionary statements - response

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P311 Call a POISON CENTER/doctor  
P330 Rinse mouth

#### Labelling of packages where the contents do not exceed 125 ml

Signal word: **Danger**

Symbol(s)



H301+H331 Toxic if swallowed or if inhaled.  
H413 May cause long lasting harmful effects to aquatic life.  
P261 Avoid breathing dust.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P311 Call a POISON CENTER/doctor.  
P330 Rinse mouth.

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### 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    |
| EC No             | 231-957-4    |
| Index No          | 034-001-00-2 |

| Substance, Specific Conc. Limits, M-factors, ATE |           |                           |                                   |
|--|-----------|---------------------------|-----------------------------------|
| Specific Conc. Limits                            | M-Factors | ATE                       | Exposure route                    |
| -  | -         | 100 mg/kg<br>>0,5 mg/l/4h | oral<br>inhalation: dust/<br>mist |

## 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.

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### 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. Do not allow firefighting water to enter drains or water courses. 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. If substance has entered a water course or sewer, inform the responsible authority.

### 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.

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### 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.

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

##### National limit values

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

| Country | Name of agent | CAS No    | Identifier | TWA [mg/m <sup>3</sup> ] | STEL [mg/m <sup>3</sup> ] | Ceiling-C [mg/m <sup>3</sup> ] | Notation | Source               |
|---------|---------------|-----------|------------|--------------------------|---------------------------|--------------------------------|----------|----------------------|
| IE      | selenium      | 7782-49-2 | OELV       | 0,1                      |                           |                                |          | S.I. No. 619 of 2001 |

##### Notation

Ceiling-C Ceiling value is a limit value above which exposure should not occur

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

#### 8.2 Exposure controls

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

##### Eye/face protection



Use safety goggle with side protection.

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### 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).

### 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               |

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|  |  |
|--|--|
| 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.                             |
| <u>Other safety parameters</u>                     |  |
| Oxidising properties                               | none   |

### 9.2 Other information

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

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### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

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

#### Classification according to GHS (1272/2008/EC, CLP)

##### 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.

##### 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  $\geq 0,1\%$ .



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### 11.3 Information on other hazards

There is no additional information.

## SECTION 12: Ecological information

### 12.1 Toxicity

May cause long lasting harmful effects to aquatic life.

| Aquatic toxicity (chronic) |             |                |        |               |
|----------------------------|-------------|----------------|--------|---------------|
| Endpoint                   | Value       | Species        | Source | Exposure time |
| EC50                       | >3.200 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 |
|---------------------------|---|

### 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.

## 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. Avoid release to the environment. Refer to special instructions/safety data sheets.

#### Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

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### 13.2 Relevant provisions relating to waste

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

#### Properties of waste which render it hazardous

**HP 5** specific target organ toxicity (STOT)/aspiration toxicity

**HP 6** acute toxicity

**HP 14** ecotoxic

### 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 or ID number

|           |         |
|-----------|---------|
| ADRRID    | UN 3288 |
| IMDG-Code | UN 3288 |
| ICAO-TI   | UN 3288 |

### 14.2 UN proper shipping name

|                |                                |
|----------------|--------------------------------|
| ADRRID         | 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)

|           |     |
|-----------|-----|
| ADRRID    | 6.1 |
| IMDG-Code | 6.1 |
| ICAO-TI   | 6.1 |

### 14.4 Packing group

|           |     |
|-----------|-----|
| ADRRID    | III |
| IMDG-Code | III |
| ICAO-TI   | III |

### 14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

### 14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

### 14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

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

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### Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) Additional information

|   |   |
|---|---|
| Proper shipping name  | TOXIC SOLID, INORGANIC, N.O.S.                                    |
| Particulars in the transport document   | UN3288, TOXIC SOLID, INORGANIC, N.O.S., (Selenium), 6.1, III, (E) |
| Classification code   | T5  |
| Danger label(s)   | 6.1   |
|  |   |
| Special provisions (SP)   | 274, 802(ADN)   |
| Excepted quantities (EQ)  | E1  |
| Limited quantities (LQ)   | 5 kg  |
| Transport category (TC)   | 2   |
| Tunnel restriction code (TRC)   | E   |
| Hazard identification No  | 60  |

### Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) Additional information

|   |               |
|---|---------------|
| <b>Classification code</b>  | T5            |
| <b>Danger label(s)</b>  | 6.1           |
|  |               |
| <b>Special provisions (SP)</b>  | 274, 802(ADN) |
| <b>Excepted quantities (EQ)</b>   | E1            |
| <b>Limited quantities (LQ)</b>  | 5 kg          |
| <b>Transport category (TC)</b>  | 2             |
| <b>Hazard identification No</b>   | 60            |

### 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  | -  |
| Danger label(s)   | 6.1  |
|  |  |
| Special provisions (SP)   | 223, 274   |
| Excepted quantities (EQ)  | E1   |
| Limited quantities (LQ)   | 5 kg   |
| EmS   | F-A, S-A   |

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|   |  |
|---|--|
| Stowage category  | A  |
| <b>International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information</b> |  |
| 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

#### Relevant provisions of the European Union (EU)

##### Restrictions according to REACH, Annex XVII

not listed

##### List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list

Not listed.

##### Seveso Directive

| 2012/18/EU (Seveso III) |                                       |   |       |
|-------------------------|---------------------------------------|---|-------|
| No                      | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes |
| H2                      | acute toxic (cat. 2 + cat. 3, inhal.) | 50                      200   | 41)   |

##### Notation

- 41) - Category 2, all exposure routes
- category 3, inhalation exposure route

##### Deco-Paint Directive

|             |       |
|-------------|-------|
| VOC content | 0 %   |
| VOC content | 0 g/l |

##### Industrial Emissions Directive (IED)

|             |       |
|-------------|-------|
| VOC content | 0 %   |
| VOC content | 0 g/l |

##### Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

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### Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

### Water Framework Directive (WFD)

| List of pollutants (WFD) |                            |        |           |         |
|--------------------------|----------------------------|--------|-----------|---------|
| Name of substance        | Name acc. to inventory     | CAS No | Listed in | Remarks |
| Selenium                 | Metals and their compounds |        | a)        |         |

#### Legend

a) Indicative list of the main pollutants

### Regulation on the marketing and use of explosives precursors

not listed

### Regulation on drug precursors

not listed

### Regulation on substances that deplete the ozone layer (ODS)

not listed

### Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

### Regulation on persistent organic pollutants (POP)

not 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

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### Legend

|            |   |
|------------|---|
| 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 |
| 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

Chemical safety assessments for substances in this mixture were not carried out.

## 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:<br>Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$ . | yes             |
| 14.8    |   | Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional information              | yes             |
| 14.8    |   | Classification code:<br>T5  | yes             |
| 14.8    |   | Danger label(s):<br>6.1   | yes             |
| 14.8    |   | Danger label(s):<br>change in the listing (table)   | yes             |
| 14.8    |   | Special provisions (SP):<br>274, 802(ADN)   | yes             |
| 14.8    |   | Excepted quantities (EQ):<br>E1   | yes             |
| 14.8    |   | Limited quantities (LQ):<br>5 kg  | yes             |
| 14.8    |   | Transport category (TC):<br>2   | yes             |
| 14.8    |   | Hazard identification No:<br>60   | yes             |
| 15.1    | VOC content:<br>0 %<br>, 0 g/l  | VOC content:<br>0 %   | yes             |
| 15.1    |   | VOC content:<br>0 g/l   | yes             |
| 15.1    |   | National inventories:<br>change in the listing (table)  | yes             |
| 15.2    | Chemical Safety Assessment:<br>No Chemical Safety Assessment has been carried out for this substance. | Chemical safety assessment:<br>Chemical safety assessments for substances in this mixture were not carried out.       | yes             |

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### Abbreviations and acronyms

| Abbr.                | Descriptions of used abbreviations  |
|----------------------|---|
| ADR                  | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)                     |
| ATE                  | Acute Toxicity Estimate   |
| CAS                  | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)  |
| Ceiling-C            | Ceiling value   |
| CLP                  | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures  |
| 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  |
| EC No                | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| 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   |
| index No             | The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008  |
| NLP                  | No-Longer Polymer   |
| PBT                  | Persistent, Bioaccumulative and Toxic   |
| REACH                | Registration, Evaluation, Authorisation and Restriction of Chemicals  |
| RID                  | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)           |
| S.I. No. 619 of 2001 | Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001   |
| STEL                 | Short-term exposure limit   |
| SVHC                 | Substance of Very High Concern  |
| TWA                  | Time-weighted average   |
| VOC                  | Volatile Organic Compounds  |
| vPvB                 | Very Persistent and very Bioaccumulative  |

# Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU



## Selenium ROTI®METIC 99,999 % (5N)

article number: **4547**

### Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). 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. |
| H413 | May cause long lasting harmful effects to aquatic life.            |

### Disclaimer

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