

Safety Data Sheet

According to Hazardous Products Regulation (SOR/2015-17)

Revision date: 27.09.2022

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SECTION 1: Identification

Product identifier

| | |
|--------------------------------|-----------------------|
| Trade name/designation: | 1000 µg/mL Selenium+4 |
| Product No.: | CGSE4-1-125 |
| Synonymes: | none |
| CAS No.: | not applicable |
| Other means of identification: | |

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

| | |
|-----------------------|------------------------------------|
| Recommended Use: | For Further Manufacturing Use Only |
| Uses advised against: | Not for Human or Animal Drug Use |

Details of the supplier of the safety data sheet

Supplier

VWR International

| | |
|------------------|--|
| Street | 2360 Argentia Road |
| Postal code/City | Mississauga, Ontario Canada L5N 5Z7 |
| Telephone | +1-800-932-5000 toll-free within US/Canada |
| Telefax: | +1-610-728-2103 |

Emergency phone number

Telephone +1-613-996-6666 (Canutec, 24 hrs/day, 7 days/week, Canada)

Preparation Information

VWR International - Product Information Compliance

E-mail SDS@avantorsciences.com

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Classification according to Hazardous Products Regulation (SOR/2015-17)

| Hazard classes and hazard categories | Hazard statements |
|--|-------------------|
| Substance or mixture corrosive to metals, category 1 | H290 |
| Skin irritation, category 2 | H315 |
| Eye irritation, category 2 | H319 |

2.2 Label elements

Labelling in accordance with (SOR/2015-17)

Hazard pictograms



Signal word: Warning

| Hazard statements | |
|-------------------|--------------------------------|
| H290 | May be corrosive to metals. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |

| Precautionary statements | |
|--------------------------|--|
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P302+P352 | IF ON SKIN: Wash with plenty of water/... |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P311 | IF exposed or concerned: Call a POISON CENTER/doctor/... |

Hazards not otherwise classified (HNOC)

none

SECTION 3: Composition / information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

Hazardous ingredients GHS Classification in accordance with (SOR/2015-17)

| Substance name | Concentration | Identifier | Hazard classes and hazard categories |
|----------------|---------------|--------------------|---|
| Nitric acid | 2% | CAS No.: 7697-37-2 | Ox. Liq. 2 - H272 Met. Corr. 1 - H290 Acute Tox. 1 - H330 Skin Corr. 1A - H314 |
| Selenium | 0.1% | CAS No.: 7782-49-2 | STOT RE 2 - H373 Acute Tox. 3 - H301+H331 |

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician. If unconscious but breathing normally, place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

In case of inhalation

Call a POISON CENTER/doctor. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. In case of skin reactions, consult a physician.

After eye contact:

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

In case of ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting. Give nothing to eat or drink.

Self-protection of the first aider

First aider: Pay attention to self-protection!

4.2 Most important symptoms/effects, acute and delayed

no data available

4.3 Indication of any immediate medical attention and special treatment needed

no data available

SECTION 5: Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media

The product itself does not burn.
Co-ordinate fire-fighting measures to the fire surroundings.

Extinguishing media which must not be used for safety reasons

no restriction

5.2 Specific hazards arising from the chemical

In case of fire may be liberated:
Pyrolysis products, toxic

5.3 Advice for firefighters

DO NOT fight fire when fire reaches explosives.
Protective equipment and precautions for firefighters:
Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information

Do not allow run-off from fire-fighting to enter drains or water courses.
Do not inhale explosion and combustion gases.
Use water spray/stream to protect personnel and to cool endangered containers.
In case of fire: Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

In case of major fire and large quantities: Remove persons to safety.

6.2 Environmental precautions

Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

Spilled product must never be returned to the original container for recycling. Collect in closed and suitable containers for disposal.

6.4 Additional information

Clear spills immediately.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

All work processes must always be designed so that the following is as low as possible:

Inhalation
skin contact
Eye contact

Use extractor hood (laboratory).

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

If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: no data available

Keep container tightly closed and in a well-ventilated place. Keep/Store only in original container.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

| Ingredient (Designation) | Source | Country | parameter | Limit value |
|--------------------------|--------|---------|-----------|-------------------------------|
| Nitric acid | CNESST | CA | VECD | 10 mg/m ³ - 4 ppm |
| Nitric acid | CNESST | CA | VEMP | 5.2 mg/m ³ - 2 ppm |

8.2 Engineering 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.

Personal protection equipment (PPE)

Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

Eye/face protection

Eye glasses with side protection

Skin protection

Wear suitable gloves. When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Check leak tightness/impermeability prior to use.

By short-term hand contact

Suitable material: NBR (Nitrile rubber)
 Thickness of the glove material: 0,12 mm
 Breakthrough time: > 480 min

By long-term hand contact

Suitable material: NBR (Nitrile rubber)
 Thickness of the glove material: 0,38 mm
 Breakthrough time: > 480 min

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Additional information

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Environmental exposure controls

no data available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---------------------|-------------------|
| (a) Appearance | |
| Physical state: | liquid |
| Color: | colorless |
| (b) Odor: | odorless |
| (c) Odor threshold: | no data available |

Safety relevant basic data

| | |
|--|---------------------------|
| (d) pH: | no data available |
| (e) Melting point/freezing point: | no data available |
| (f) Initial boiling point and boiling range: | no data available |
| (g) Flash point: | no data available |
| (h) Evaporation rate: | no data available |
| (i) Flammability (solid, gas): | not applicable |
| (j) Flammability or explosive limits | |
| Lower explosion limit: | no data available |
| Upper explosion limit: | no data available |
| (k) Vapor pressure: | no data available |
| (l) Vapor density: | no data available |
| (m) Density: | no data available |
| (n) Solubility(ies) | |
| Water solubility: | soluble (20°C) |
| (o) Partition coefficient: n-octanol/water: | no data available |
| (p) Auto-ignition temperature: | no data available |
| (q) Decomposition temperature: | not applicable |
| (r) Viscosity | |
| Kinematic viscosity: | no data available |
| Dynamic viscosity: | no data available |
| (s) Explosive properties: | not applicable |
| (t) Oxidising properties: | not applicable |
| (u) Particle characteristics: | does not apply to liquids |

9.2 Other information

| | |
|------------------------|-------------------|
| Bulk density: | no data available |
| Refraction index: | no data available |
| Dissociation constant: | no data available |
| Surface tension: | no data available |
| Henry's Law Constant: | no data available |

SECTION 10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

no data available

10.7 Additional information

no data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects

Acute oral toxicity:

Nitric acid - LDLo: > 430 mg/kg - Human - (Sax)

Selenium - LD50: > 6700 mg/kg - Rat - (RTECS)

Acute dermal toxicity:

no data available

Acute inhalation toxicity:

Nitric acid - LC50: > 2.65 mg/l (4 h) - Rat - (OECD 403)

Irritant and corrosive effects

Primary irritation to the skin:

Causes skin irritation.

Irritation to eyes:

Causes serious eye irritation.

Irritation to respiratory tract:

not applicable

Respiratory or skin sensitization

In case of skin contact: not sensitizing

In case of inhalation: not sensitizing

STOT-single exposure

not applicable

STOT-repeated exposure

not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carcinogenicity

No indication of human carcinogenicity.

Germ cell mutagenicity

No indications of human germ cell mutagenicity exist.

Reproductive toxicity

No indications of human reproductive toxicity exist.

Aspiration hazard

not applicable

Other adverse effects

no data available

Additional information

no data available

SECTION 12: Ecological information

12.1 Ecotoxicity

Fish toxicity:

Selenium - LC50: 33 mg/l (96 h) - Hamilton, S.J., and K.J. Buhl 1990. Acute Toxicity of Boron, Molybdenum, and Selenium to Fry of Chinook Salmon and Coho Salmon. Arch. Environ. Contam. Toxicol. 19(3):366-373

Daphnia toxicity:

Selenium - LC50: 0.71 mg/l (48 h) - Halter, M.T., W.J. Adams, and H.E. Johnson 1980. Selenium Toxicity to Daphnia magna, Hyallela azteca, and the Fathead Minnow in Hard Water. Bull. Environ. Contam. Toxicol. 24(1):102-107

Algae toxicity:

Selenium - EC50: 96 mg/l (96 h) - Ibrahim, A.M., and A. Spacie 1990. Toxicity of Inorganic Selenium to the Green Alga Selenastrum capricornutum Printz. Environ. Exp. Bot. 30(3):265-269

Selenium - EC50: 99 mg/l (72 h) - Ibrahim, A.M., and A. Spacie 1990. Toxicity of Inorganic Selenium to the Green Alga Selenastrum capricornutum Printz. Environ. Exp. Bot. 30(3):265-269

Bacteria toxicity:

no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water: no data available

12.4 Mobility in soil:

no data available

12.5 Results of PBT/vPvB assessment

not applicable

12.6 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Appropriate disposal / Product

Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: no data available

Appropriate disposal / Package

Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

Additional information

no data available

SECTION 14: Transport information

Land transport (TDG)

| | |
|-------------------------------|--|
| UN-No.: | 3264 |
| Proper Shipping Name: | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION) |
| Class(es): | 8 |
| Packing group: | III |
| Environmental hazards: | No |
| Marine pollutant: | No |
| Special precautions for user: | |

Sea transport (IMDG)

| | |
|-----------------------|--|
| UN-No.: | 3264 |
| Proper Shipping Name: | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION) |
| Class(es): | 8 |
| Classification code: | |

| | |
|--|---------|
| Hazard label(s): | 8 |
| Packing group: | III |
| Environmental hazards: | No |
| Marine pollutant: | No |
| Special precautions for user: | |
| Segregation group: | 1 |
| EmS-No. | F-A S-B |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | |
| not relevant | |

Air transport (ICAO-TI / IATA-DGR)

| | |
|-------------------------------|--|
| UN-No.: | 3264 |
| Proper Shipping Name: | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION) |
| Class(es): | 8 |
| Classification code: | |
| Hazard label(s): | 8 |
| Packing group: | III |
| Special precautions for user: | |

SECTION 15: Regulatory information

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

Domestic Substance List:

SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
 DOT - Department of Transportation
 IARC - International Agency for Research on Cancer
 IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
 ICAO-TI - International Civil Aviation Organization-Technical Instructions
 IMDG - International Maritime Code for Dangerous Goods
 LTV - Long Term Value
 NIOSH - National Institute for Occupational Safety and Health
 NTP - National Toxicology Program
 OSHA - Occupational Safety & Health Administration
 PBT - Persistent, Bioaccumulative and Toxic
 PEL - Permissible Exposure Limit
 STV - Short Term Value
 SVHC - Substances of Very High Concern
 TDG - Transport of Dangerous Goods
 TLV - Threshold Limit Value
 vPvB - very Persistent, very Bioaccumulative

Key literature references and sources for data

This Safety Data Sheet has been prepared based on information available for public as TOXNET information, European Chemicals Agency (ECHA) substance dossier, papers from international cancer research institutes (IARC Monographs), U.S. National Toxicology Program data, U.S. Agency for Toxic Substances and Disease Control (ATSDR), PubChem websites and SDS from our raw material manufacturers.

| Revision date | Version | Print date |
|---------------|---------|------------|
| 27.09.2022 | 1.0 | 27.09.2022 |

Additional information

| | |
|-----------------------|-----------|
| Indication of changes | none/none |
|-----------------------|-----------|

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guidance. The information in this document is based on the present state knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International and his Affiliates shall not be held liable for any damage resulting from handling.