

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 20.07.2021

Revision: 20.07.2021

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

- **1.1 Product identifier**
- **Trade name:** Selenium(IV) oxide (99.999%-Se) PURATREM
- **Item number:** 93-3405
- **CAS Number:**  
7446-08-4
- **EC number:**  
231-194-7
- **Index number:**  
034-002-00-8
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Strem Chemicals, Inc.  
7 Mulliken Way  
NEWBURYPORT, MA 01950  
USA  
info@strem.com
- **Further information obtainable from:** Technical Department
- **1.4 Emergency telephone number:**  
EMERGENCY: CHEMTREC: + 1 (800) 424-9300  
During normal opening times: +1 (978) 499-1600

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS06 skull and crossbones

Acute Tox. 3      H301 Toxic if swallowed.

Acute Tox. 3      H331 Toxic if inhaled.



GHS08 health hazard

STOT RE 2      H373 May cause damage to organs through prolonged or repeated exposure.



GHS09 environment

Aquatic Acute 1      H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.

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· **Hazard pictograms**



GHS06 GHS08 GHS09

· **Signal word** *Danger*

· **Hazard-determining components of labelling:**

*selenium dioxide*

· **Hazard statements**

H301+H331 *Toxic if swallowed or if inhaled.*

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

H410 *Very toxic to aquatic life with long lasting effects.*

· **Precautionary statements**

P101 *If medical advice is needed, have product container or label at hand.*

P102 *Keep out of reach of children.*

P103 *Read label before use.*

P231 *Handle under inert gas.*

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

P305+P351+P338 *IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*

P403+P233 *Store in a well-ventilated place. Keep container tightly closed.*

P422 *Store contents under inert gas.*

P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** *Not applicable.*

· **vPvB:** *Not applicable.*

**SECTION 3: Composition/information on ingredients**

· **3.1 Chemical characterisation: Substances**

· **CAS No. Description**

7446-08-4 *selenium dioxide*

· **Identification number(s)**

· **EC number:** 231-194-7

· **Index number:** 034-002-00-8

**SECTION 4: First aid measures**

· **4.1 Description of first aid measures**

· **General information:**

*Immediately remove any clothing soiled by the product.*

*Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.*

*Remove breathing equipment only after contaminated clothing have been completely removed.*

*In case of irregular breathing or respiratory arrest provide artificial respiration.*

· **After inhalation:**

*Supply fresh air or oxygen; call for doctor.*

*In case of unconsciousness place patient stably in side position for transportation.*

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- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### **SECTION 5: Firefighting measures**

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### **SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:**  
Do not allow product to reach sewage system or any water course.  
Inform respective authorities in case of seepage into water course or sewage system.
- **6.3 Methods and material for containment and cleaning up:**  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### **SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling**  
Thorough dedusting.  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.
- **Handling:** Handle under inert gas.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:** Store contents under inert gas.
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

### **SECTION 8: Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.

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· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

**7446-08-4 selenium dioxide**

WEL	Long-term value: 0.1 mg/m <sup>3</sup> as Se
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· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Store protective clothing separately.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

<b>Form:</b>	Powder
<b>Colour:</b>	Whitish
<b>Odour:</b>	Odourless
<b>Odour threshold:</b>	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

<b>Melting point/freezing point:</b>	Undetermined.
<b>Initial boiling point and boiling range:</b>	340-350 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gas):** Not determined.

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· <b>Ignition temperature:</b>	
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto-ignition temperature:</b> Not determined.	
· <b>Explosive properties:</b> Product does not present an explosion hazard.	
· <b>Explosion limits:</b>	
· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.
· <b>Vapour pressure:</b> Not applicable.	
· <b>Density at 20 °C:</b> 3.95 g/cm <sup>3</sup>	
· <b>Relative density:</b> Not determined.	
· <b>Vapour density:</b> Not applicable.	
· <b>Evaporation rate:</b> Not applicable.	
· <b>Solubility in / Miscibility with water:</b> Insoluble.	
· <b>Partition coefficient: n-octanol/water:</b> Not determined.	
· <b>Viscosity:</b>	
· <b>Dynamic:</b>	Not applicable.
· <b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
· <b>Organic solvents:</b>	0.0 %
· <b>VOC (EC)</b>	0.00 %
· <b>Solids content:</b> 100.0 %	
· <b>9.2 Other information:</b> No further relevant information available.	

### SECTION 10: Stability and reactivity

- **10.1 Reactivity:** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions:** No dangerous reactions known.
- **10.4 Conditions to avoid:** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Toxic if swallowed or if inhaled.
- **Primary irritant effect:**
- **Skin corrosion/irritation:** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation:** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

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- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure**  
May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard** Based on available data, the classification criteria are not met.


**SECTION 12: Ecological information**

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**  
Also poisonous for fish and plankton in water bodies.  
Very toxic for aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

**SECTION 14: Transport information**

- |   |                                       |
|---|---------------------------------------|
| · <b>14.1 UN-Number</b>   |                                       |
| · <b>ADR, IMDG, IATA</b>  | UN3283                                |
| · <b>14.2 UN proper shipping name</b>   |                                       |
| · <b>ADR</b>  | 3283 SELENIUM COMPOUND, SOLID, N.O.S. |
| · <b>IMDG, IATA</b>   | SELENIUM COMPOUND, SOLID, N.O.S.      |
| · <b>14.3 Transport hazard class(es)</b>  |                                       |
| · <b>ADR</b>  |                                       |
|  |                                       |
| · <b>Class</b>  | 6                                     |

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· <b>Label</b>	6.1
· <b>IMDG, IATA</b>	
	
· <b>Class</b>	6.1 Toxic substances.
· <b>Label</b>	6.1
· <b>14.4 Packing group</b>	
· <b>ADR, IMDG, IATA</b>	III
· <b>14.5 Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>14.6 Special precautions for user</b> Not applicable.	
· <b>Danger code (Kemler):</b>	60
· <b>EMS Number:</b>	F-A,S-A
· <b>Stowage Category</b>	A
· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b> Not applicable.	
· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· <b>Limited quantities (LQ)</b>	5 kg
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>Transport category</b>	2
· <b>Tunnel restriction code</b>	D/E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5 kg
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>UN "Model Regulation":</b>	UN 3283 SELENIUM COMPOUND, SOLID, N.O.S., 6.1, III

**SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **Seveso category**  
H2 ACUTE TOXIC  
E1 Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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**SECTION 16: Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** Technical Department.

· **Contact:** Technical Director

· **Abbreviations and acronyms:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*GHS: Globally Harmonised System of Classification and Labelling of Chemicals*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*VOC: Volatile Organic Compounds (USA, EU)*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*Acute Tox. 3: Acute toxicity – Category 3*

*STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2*

*Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1*

*Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1*

GB