

**Safety Data Sheet**  
according to OSHA HCS

Printing date 07/19/2021

Reviewed on 07/19/2021

**1 Identification**

- **Product name**
- **Trade name:** Osmium(III) chloride hydrate (99.95+%Os)
- **Item number:** 76-2210
- **CAS Number:**  
14996-60-2
- **EC number:**  
236-587-7
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Strem Chemicals, Inc.  
7 Mulliken Way  
NEWBURYPORT, MA 01950  
USA  
info@strem.com
- **Information department:** Technical Department
- **Emergency telephone number:**  
EMERGENCY: CHEMTREC: + 1 (800) 424-9300  
During normal opening times: +1 (978) 499-1600

**2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS05 Corrosion

Skin Corr. 1C H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

- 
- **Label elements**
  - **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**



GHS05

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
Osmium(III) chloride hydrate
- **Hazard statements**  
H314 Causes severe skin burns and eye damage.
- **Precautionary statements**  
P260 Do not breathe dusts or mists.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER/doctor.

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 4  
Fire = 0  
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 4  
Fire = 0  
Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

14996-60-2 Osmium(III) chloride hydrate

· **Identification number(s)**

· **EC number:** 236-587-7

### 4 First-aid measures

· **Description of first aid measures**

· **General information:** Immediately remove any clothing soiled by the product.

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Immediately rinse with water.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

· **Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced.

· **Advice for firefighters**

· **Protective equipment:** Mouth respiratory protective device.

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**6 Accidental release measures**

· **Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions: No special measures required.**

· **Methods and material for containment and cleaning up:**

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· **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.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**

Substance is not listed.

· **PAC-2:**

Substance is not listed.

· **PAC-3:**

Substance is not listed.

**7 Handling and storage**

· **Handling:**

· **Precautions for safe handling**

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

· **Information about protection against explosions and fires: Keep respiratory protective device available.**

· **Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **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 receptacle tightly sealed.**

· **Specific end use(s) No further relevant information available.**

**8 Exposure controls/personal protection**

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

· **Control parameters**

· **Components with limit values that require monitoring at the workplace: Not required.**

· **Additional information: The lists that were valid during the creation were used as basis.**

· **Exposure controls**

· **Personal protective equipment: Wear protective clothing**

· **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.

Avoid contact with the eyes.

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Avoid contact with the eyes and skin.

- **Breathing equipment:** A NIOSH approved respirator in accordance with 29 CFR 1910.134.
- **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 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

· <b>Form:</b>	Crystalline
· <b>Color:</b>	Black
· <b>Odor:</b>	Characteristic
· <b>Odor threshold:</b>	Not determined.

- **pH-value:** Not applicable.

- **Change in condition**

· <b>Melting point/Melting range:</b>	>500 °C (>932 °F)
· <b>Boiling point/Boiling range:</b>	Undetermined.

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not determined.

- **Ignition temperature:**

· **Decomposition temperature:** Not determined.

- **Auto igniting:** Not determined.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.

- **Vapor pressure:** Not applicable.

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- **Density:** Not determined.
- **Relative density** Not determined.
- **Vapor density** Not applicable.
- **Evaporation rate** Not applicable.
- **Solubility in / Miscibility with Water:** Insoluble.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic:** Not applicable.
  - Kinematic:** Not applicable.
- **Solvent content:**
  - Organic solvents:** 0.0 %
  - VOC content:** 0.0 g/l / 0.00 lb/gl
- **Solids content:** 100.0 %
- **Other information** No further relevant information available.

**10 Stability and reactivity**

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

**11 Toxicological information**

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

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**12 Ecological information**

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

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

**14 Transport information**

- |                                     |   |
|-------------------------------------|---|
| · <b>UN-Number</b>                  |   |
| · <b>DOT, IMDG, IATA</b>            | UN1759  |
| · <b>UN proper shipping name</b>    |   |
| · <b>DOT</b>                        | Corrosive solids, n.o.s.  |
| · <b>IMDG, IATA</b>                 | CORROSIVE SOLID, N.O.S.   |
| · <b>Transport hazard class(es)</b> |   |
| · <b>DOT</b>                        |   |
|                                     |  |
| · <b>Class</b>                      | 8 Corrosive substances  |
| · <b>Label</b>                      | 8   |
| -----                               |   |
| · <b>IMDG, IATA</b>                 |   |
|                                     |  |
| · <b>Class</b>                      | 8 Corrosive substances  |
| · <b>Label</b>                      | 8   |

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· <b>Packing group</b> · <b>DOT, IMDG, IATA</b>	<i>III</i>
· <b>Environmental hazards:</b> · <b>Marine pollutant:</b>	<i>No</i>
· <b>Special precautions for user</b> · <b>EMS Number:</b> · <b>Stowage Category</b>	<i>Warning: Corrosive substances F-A,S-B A</i>
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	<i>Not applicable.</i>
· <b>Transport/Additional information:</b> · <b>DOT</b> · <b>Quantity limitations</b>	<i>On passenger aircraft/rail: 25 kg On cargo aircraft only: 100 kg</i>
· <b>UN "Model Regulation":</b>	<i>UN 1759 CORROSIVE SOLIDS, N.O.S., 8, III</i>

**15 Regulatory information**

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

· **Section 355 (extremely hazardous substances):**  
*Substance is not listed.*

· **Section 313 (Specific toxic chemical listings):**  
*Substance is not listed.*

· **TSCA (Toxic Substances Control Act):**  
*Substance is not listed.*

- **Proposition 65**

· **Chemicals known to cause cancer:**  
*Substance is not listed.*

· **Chemicals known to cause reproductive toxicity for females:**  
*Substance is not listed.*

· **Chemicals known to cause reproductive toxicity for males:**  
*Substance is not listed.*

· **Chemicals known to cause developmental toxicity:**  
*Substance is not listed.*

- **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**  
*Substance is not listed.*

· **TLV (Threshold Limit Value established by ACGIH)**  
*Substance is not listed.*

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**  
*Substance is not listed.*

- **GHS label elements**

*The substance is classified and labeled according to the Globally Harmonized System (GHS).*

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· **Hazard pictograms**



GHS05

· **Signal word** *Danger*

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

*Osmium(III) chloride hydrate*

· **Hazard statements**

*H314 Causes severe skin burns and eye damage.*

· **Precautionary statements**

*P260 Do not breathe dusts or mists.*

*P280 Wear protective gloves/protective clothing/eye protection/face protection.*

*P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

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

*P310 Immediately call a POISON CENTER/doctor.*

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

· **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

**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*

· **Date of preparation / last revision** *07/19/2021 / -*

· **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*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

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

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

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

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*NIOSH: National Institute for Occupational Safety*

*OSHA: Occupational Safety & Health*

*TLV: Threshold Limit Value*

*PEL: Permissible Exposure Limit*

*REL: Recommended Exposure Limit*

*Skin Corr. 1C: Skin corrosion/irritation – Category 1C*

*Eye Dam. 1: Serious eye damage/eye irritation – Category 1*