

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

Printing date 31.07.2016

Revision: 31.07.2016

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

- **1.1 Product identifier**
- **Trade name:** Lead(IV) oxide, 97+% (ACS)
- **Item number:** 93-8210
- **CAS Number:**  
1309-60-0
- **EC number:**  
215-174-5
- **Index number:**  
082-001-00-6
- **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**



GHS08 health hazard

Repr. 1A            H360Df May damage the unborn child. Suspected of damaging fertility.  
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.



GHS07

Acute Tox. 4        H302    Harmful if swallowed.  
Acute Tox. 4        H332    Harmful if inhaled.

- **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**



GHS07    GHS08    GHS09

· **Signal word** *Danger*

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

*lead dioxide*

· **Hazard statements**

*H302+H332 Harmful if swallowed or if inhaled.*

*H360Df May damage the unborn child. Suspected of damaging fertility.*

*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.*

*P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

*P221 Take any precaution to avoid mixing with combustibles.*

*P260 Do not breathe dust/fume/gas/mist/vapours/spray.*

*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.*

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

· **Additional information:**

*Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.*

· **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**

*1309-60-0 lead dioxide*

· **Identification number(s)**

· **EC number:** 215-174-5

· **Index number:** 082-001-00-6

**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.*

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- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
In case of unconsciousness place patient stably in side position for transportation.
- **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:** Call for a doctor 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:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture**  
During heating or in case of fire poisonous gases are produced.
- **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** Mount respiratory protective device.
- **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.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **7.2 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 container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

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

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **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:**

- **Form:** Powder
- **Colour:** Red-brown
- **Odour:** Odourless
- **Odour threshold:** Not determined.

· **pH-value:** Not applicable.

**Change in condition**

- **Melting point/Melting range:** 290 dec °C
- **Boiling point/Boiling range:** no data °C

· **Flash point:** Not applicable.

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

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· <b>Ignition temperature:</b>	
· <b>Decomposition temperature:</b>	Not determined.
· <b>Self-igniting:</b>	Not determined.
· <b>Danger of explosion:</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 appli hPa
· <b>Density at 20 °C:</b>	9.375 g/cm <sup>3</sup>
· <b>Bulk density at 20 °C:</b>	1500 kg/m <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**  
Harmful 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.

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- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity**  
May damage the unborn child. Suspected of damaging fertility.
- **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>              | UN1872            |
| · <b>14.2 UN proper shipping name</b> |                   |
| · <b>ADR</b>                          | 1872 LEAD DIOXIDE |
| · <b>IMDG</b>                         | LEAD DIOXIDE      |
| · <b>IATA</b>                         | Lead dioxide      |

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· **14.3 Transport hazard class(es)**

· **ADR**



· **Class** 5  
· **Label** 5.1

· **IMDG, IATA**



· **Class** 5.1 Oxidising substances.  
· **Label** 5.1

· **14.4 Packing group**

· **ADR, IMDG, IATA** III

· **14.5 Environmental hazards:**

· **Marine pollutant:** No

· **14.6 Special precautions for user**

· **Danger code (Kemler):** 56  
· **Segregation groups** Heavy metals and their salts (including their organometallic compounds), lead and its compounds  
· **Stowage Category** A

· **14.7 Transport in bulk according to Annex II of**

**Marpol and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Limited quantities (LQ)** 5 kg  
· **Excepted quantities (EQ)** Code: E1  
Maximum net quantity per inner packaging: 30 g  
Maximum net quantity per outer packaging: 1000 g  
· **Transport category** 3  
· **Tunnel restriction code** E

· **IMDG**

· **Limited quantities (LQ)** 5 kg  
· **Excepted quantities (EQ)** Code: E1  
Maximum net quantity per inner packaging: 30 g  
Maximum net quantity per outer packaging: 1000 g

· **UN "Model Regulation":**

UN 1872 LEAD DIOXIDE, 5.1, III

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**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 E1 Hazardous to the Aquatic Environment**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements 100 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.**

**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 MSDS: 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. 4: Acute toxicity, Hazard Category 4*  
*Repr. 1A: Reproductive toxicity, Hazard Category 1A*  
*STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2*  
*Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1*  
*Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1*

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