# 1 Identification

- **Product name**
  - Trade name: Cobalt(II) chloride, anhydrous, 99+%
- **Item number:** 93-2721
- **CAS Number:** 7646-79-9
- **EC number:** 231-589-4
- **Index number:** 027-004-00-5
- **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**
  - GHS08 Health hazard
  - Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - Muta. 2 H341 Suspected of causing genetic defects.
  - Carc. 1B H350 May cause cancer.
  - Repr. 1B H360 May damage fertility or the unborn child.
  - GHS07
  - Acute Tox. 4 H302 Harmful if swallowed.
  - Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Label elements**
  - **GHS label elements**
    The substance is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**
    - GHS07
    - GHS08

- **Signal word** Danger

  **Hazard-determining components of labeling:**
  Cobalt(II) chloride, anhydrous (99.999%-Co) PURATREM
Trade name: Cobalt(II) chloride, anhydrous, 99+%  

- **Hazard statements**  
  H302 Harmful if swallowed.  
  H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
  H317 May cause an allergic skin reaction.  
  H341 Suspected of causing genetic defects.  
  H350 May cause cancer.  
  H360 May damage fertility or the unborn child.  

- **Precautionary statements**  
  P280 Wear protective gloves/protective clothing/eye protection/face protection.  
  P284 [In case of inadequate ventilation] wear respiratory protection.  
  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.  

- **Classification system:**  
  - **NFPA ratings (scale 0 - 4)**  
    
    - Health = 2  
    - Fire = 0  
    - Reactivity = 0  
  - **HMIS-ratings (scale 0 - 4)**  
    
    - Health = *2  
    - 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**  
  7646-79-9 Cobalt(II) chloride, anhydrous (99.999%-Co) PURATREM  
- **Identification number(s)**  
  - EC number: 231-589-4  
  - Index number: 027-004-00-5  

4 First-aid measures  

- **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.  
- **After inhalation:**  
  Supply fresh air and to be sure call for a doctor.  
  In case of unconsciousness place patient stably in side position for transportation.  

(Contd. on page 3)
Safety Data Sheet
according to OSHA HCS

Trade name: Cobalt(II) chloride, anhydrous, 99+% (Contd. of page 2)

- 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: Immediately call a 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:
    - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  - Special hazards arising from the substance or mixture: No further relevant information available.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Not required.
- 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.
- Methods and material for containment and cleaning up:
  - 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.

7 Handling and storage

- Handling:
  - Precautions for safe handling:
    - Ensure good ventilation/exhaustion at the workplace.
    - Open and handle receptacle with care.
  - Information about protection against explosions and fires: No special measures required.
- 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: Store in cool, dry conditions in well sealed receptacles.
- 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. (Contd. on page 4)
Trade name: Cobalt(II) chloride, anhydrous, 99+%  

Control parameters  

Components with limit values that require monitoring at the workplace:  

<table>
<thead>
<tr>
<th>Component</th>
<th>Long-term value</th>
<th>as Co</th>
<th>for metal dust and fume</th>
</tr>
</thead>
<tbody>
<tr>
<td>7646-79-9 Cobalt(II) chloride, anhydrous (99.999%-Co) PURATREM</td>
<td>0.1 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REL</td>
<td>Long-term value: 0.05 mg/m³</td>
<td>as Co</td>
<td>metal dust &amp; fume</td>
</tr>
<tr>
<td>TLV</td>
<td>Long-term value: 0.02 mg/m³</td>
<td>as Co</td>
<td>BEI</td>
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</tbody>
</table>

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

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.

Breathing equipment:  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

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:

Form: Powder  
Color: Blue  
Odor: Odorless
### 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:
    - LD/LC50 values that are relevant for classification:
      - Oral LD50 80 mg/kg (rat)

7646-79-9 Cobalt(II) chloride, anhydrous (99.999%-Co) PURATREM

- Primary irritant effect:
  - on the skin: No irritant effect.
  - on the eye: No irritating effect.
- Sensitization:
  - Sensitization possible through inhalation.
  - Sensitization possible through skin contact.
- Additional toxicological information:
  - Carcinogenic categories
    - IARC (International Agency for Research on Cancer)
      - 7646-79-9 Cobalt(II) chloride, anhydrous (99.999%-Co) PURATREM 2B
    - NTP (National Toxicology Program)
      - Substance is not listed.
    - OSHA-Ca (Occupational Safety & Health Administration)
      - Substance is not listed.

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: Not known to be hazardous to water.
  - 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.
### Trade name: Cobalt(II) chloride, anhydrous, 99+% (Contd. of page 6)

- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

<table>
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<tr>
<th>UN-Number</th>
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<tbody>
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<td>UN3288</td>
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<table>
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<tr>
<th>Transport hazard class(es)</th>
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<tbody>
<tr>
<td>DOT</td>
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<tr>
<td>- Class</td>
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<tr>
<td>- Label</td>
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<table>
<thead>
<tr>
<th>IMDG, IATA</th>
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<tbody>
<tr>
<td>- Class</td>
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<td>- Label</td>
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<table>
<thead>
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<table>
<thead>
<tr>
<th>Environmental hazards:</th>
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<td>Marine pollutant:</td>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Special precautions for user</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danger code (Kemler):</td>
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<tr>
<td>Stowage Category:</td>
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<tr>
<td></td>
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<tr>
<td>Not applicable.</td>
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<table>
<thead>
<tr>
<th>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</th>
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</thead>
<tbody>
<tr>
<td>Not applicable.</td>
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</tbody>
</table>

<table>
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<tr>
<th>Transport/Additional information:</th>
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<tbody>
<tr>
<td>DOT</td>
</tr>
<tr>
<td>Quantity limitations</td>
</tr>
<tr>
<td>On passenger aircraft/rail: 100 kg</td>
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<tr>
<td>On cargo aircraft only: 200 kg</td>
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<thead>
<tr>
<th>IMDG</th>
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</thead>
<tbody>
<tr>
<td>Limited quantities (LQ): 5 kg</td>
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<tr>
<td>Excepted quantities (EQ) Code: E1</td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 g</td>
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<tr>
<td>Maximum net quantity per outer packaging: 1000 g</td>
</tr>
</tbody>
</table>
15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Section 355 (extremely hazardous substances):
    Substance is not listed.
  - Section 313 (Specific toxic chemical listings):
    Substance is listed.
  - TSCA (Toxic Substances Control Act):
    Substance is 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).
  - Hazard pictograms
    - GHS07
    - GHS08

- Signal word Danger
  - Hazard-determining components of labeling:
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  - Hazard statements
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according to OSHA HCS

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(Contd. of page 8)

H350 May cause cancer.
H360 May damage fertility or the unborn child.

Precautionary statements
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 [In case of inadequate ventilation] wear respiratory protection.
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.

National regulations:

Additional classification according to Decree on Hazardous Materials:
Carcinogenic hazardous material group I (extremely dangerous).
Carcinogenic hazardous material group II (very dangerous).
Carcinogenic hazardous material group III (dangerous).

Information about limitation of use:
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

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 04/02/2016 / -

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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
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
Acute Tox. 4: Acute toxicity, Hazard Category 4
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Muta. 2: Germ cell mutagenicity, Hazard Category 2
Carc. 1B: Carcinogenicity, Hazard Category 1B
Repr. 1B: Reproductive toxicity, Hazard Category 1B