1 Identification

- **Product name**
- **Trade name:** cis-Dichlorodiammine platinum(II), 99% CISPLATIN
- **Item number:** 78-0450
- **CAS Number:** 15663-27-1
- **EC number:** 239-733-8

- **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**
  - GHS06 Skull and crossbones
  - Acute Tox. 2 H300 Fatal if swallowed.

  - GHS08 Health hazard
  - Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - Muta. 1A H340 May cause genetic defects.
  - Carc. 1A H350 May cause cancer.
  - Repr. 1A H360 May damage fertility or the unborn child.

- GHS07
  - 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**
    - GHS06
    - GHS08

- **Signal word** Danger
Trade name: cis-Dichlorodiammine platinum(II), 99% CISPLATIN

- **Hazard-determining components of labeling:**
  cis-Dichlorodiammineplatinum (II) Cisplatin (USP Grade)

- **Hazard statements**
  - H300 Fatal if swallowed.
  - H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - H317 May cause an allergic skin reaction.
  - H340 May cause 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.
  - P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
  - P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  - P405 Store locked up.
  - 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 Health = *3
    - FIRE Fire = 0
    - REACTIVITY 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**
  - 15663-27-1 cis-Dichlorodiammineplatinum (II) Cisplatin (USP Grade)
- **Identification number(s)**
- **EC number:** 239-733-8

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**
  - Immediately remove any clothing soiled by the product.
  - In case of irregular breathing or respiratory arrest provide artificial respiration.
- **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.
- **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.
Trade name: cis-Dichlorodiammine platinum(II), 99% CISPLATIN

· After swallowing: Do not induce vomiting; immediately call for medical help.
· 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.
· Advice for firefighters
· Protective equipment: No special measures required.

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
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
· 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: 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.
Trade name: cis-Dichlorodiammine platinum(II), 99% CISPLATIN

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· Control parameters

· Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Compound</th>
<th>PEL Long-term value</th>
<th>REL Long-term value</th>
<th>TLV Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>15663-27-1 cis-Dichlorodiammineplatinum (II) Cisplatin (USP Grade)</td>
<td>0.002 mg/m³</td>
<td>0.002 mg/m³</td>
<td>0.002 mg/m³</td>
</tr>
<tr>
<td></td>
<td>as Pt</td>
<td>as Pt</td>
<td>as Pt</td>
</tr>
</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: Crystalline
  Color: Light orange color
  Odor: Odorless
Safety Data Sheet
according to OSHA HCS

Printing date 07/31/2016
Reviewed on 07/31/2016

Trade name: cis-Dichlorodiammine platinum(II), 99% CISPLATIN

- **Odor threshold:** Not determined.
- **pH-value:** Not applicable.
- **Change in condition**
  - Melting point/Melting range: 230 dec °C (446 dec °F)
  - Boiling point/Boiling range: no data °C
- **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:
    - Lower: Not determined.
    - Upper: Not determined.
- **Vapor pressure:** not appli hPa
- **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: 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)
      15663-27-1 cis-Dichlorodiammineplatinum (II) Cisplatin (USP Grade) 1
    - NTP (National Toxicology Program)
      15663-27-1 cis-Dichlorodiammineplatinum (II) Cisplatin (USP Grade) R
    - 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.
- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
- DOT, IMDG, IATA
  UN3288
贸名：cis-Dichlorodiammine platinum(II), 99% CISPLATIN

<table>
<thead>
<tr>
<th>UN proper shipping name</th>
<th>DOT, IATA</th>
<th>1MDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Toxic substances</td>
<td>Toxic solid, inorganic, n.o.s.</td>
<td>TOXIC SOLID, INORGANIC, N.O.S.</td>
</tr>
</tbody>
</table>

- **Transport hazard class(es)**
  - **DOT**
    - Class: 6.1 Toxic substances
    - Label: 6.1
  - **IMDG, IATA**
    - Class: 6.1 Toxic substances
    - Label: 6.1

- **Packing group**
  - DOT, IMDG, IATA: II

- **Environmental hazards:**
  - Marine pollutant: No

- **Special precautions for user**
  - Not applicable.
  - Danger code (Kemler): 60
  - EMS Number: F-A,S-A
  - Stowage Category: B

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  - Not applicable.

- **Transport/Additional information:**
  - DOT
    - Quantity limitations:
      - On passenger aircraft/rail: 25 kg
      - On cargo aircraft only: 100 kg
  - IMDG
    - Limited quantities (LQ): .5kg
      - Code: E4
      - Maximum net quantity per inner packaging: 1 g
      - Maximum net quantity per outer packaging: 500 g
    - Excepted quantities (EQ): Code: E4

- **UN "Model Regulation":**
  - UN 3288 TOXIC SOLID, INORGANIC, N.O.S., 6.1, II
Trade name: cis-Dichlorodiammine platinum(II), 99% CISPLATIN

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 listed.
  - Proposition 65
    - Chemicals known to cause cancer:
      Substance is 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
    - GHS06
    - GHS08

- Signal word Danger
  - Hazard-determining components of labeling:
    cis-Dichlorodiammineplatinum (II) Cisplatin (USP Grade)
  - Hazard statements
    H300 Fatal if swallowed.
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    P280 Wear protective gloves/protective clothing/eye protection/face protection.
Trade name: cis-Dichlorodiammine platinum(II), 99% CISPLATIN

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P284 [In case of inadequate ventilation] wear respiratory protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
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 07/31/2016 / -
· 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)
  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. 2: Acute toxicity, Hazard Category 2
  Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
  Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
  Mut. 1A: Germ cell mutagenicity, Hazard Category 1A
  Carc. 1A: Carcinogenicity, Hazard Category 1A
  Repr. 1A: Reproductive toxicity, Hazard Category 1A