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

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

· 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. 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.

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

(Contd. on page 2)
Trade name: cis-Dichlorodiammine platinum(II), 99% CISPLATIN

Hazard pictograms

GHS06  GHS08

Signal word Danger

Hazard-determining components of labelling:
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
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.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 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.

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
15663-27-1 cis-Dichlorodiammineplatinum (II) Cisplatin (USP Grade)
Identification number(s)
EC number: 239-733-8

SECTION 4: First aid measures

4.1 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.

After swallowing: Do not induce vomiting; call for medical help immediately.
Trade name: cis-Dichlorodiammine platinum(II), 99% CISPLATIN

- 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:
    CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.
- 5.3 Advice for firefighters
  - Protective equipment: No special measures required.

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.
- 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.

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:
    - 15663-27-1 cis-Dichlorodiammineplatinum (II) Cisplatin (USP Grade)
    - WEL Long-term value: 0.002 mg/m³ as Pt, Sen
· 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: Crystalline
      Colour: Light orange colour
    · Odour: Odourless
    · Odour threshold: Not determined.
  · pH-value: Not applicable.

  · Change in condition
    Melting point/Melting range: 230 dec °C
    Boiling point/Boiling range: no data °C
  · Flash point: Not applicable.
  · Flammability (solid, gaseous): Not determined.
  · Ignition temperature:
    Decomposition temperature: Not determined.
    Self-igniting: Not determined.
    Danger of explosion: Product does not present an explosion hazard.
### SECTION 10: Stability and reactivity

<table>
<thead>
<tr>
<th>10.1 Reactivity</th>
<th>No further relevant information available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.2 Chemical stability</td>
<td></td>
</tr>
<tr>
<td>Thermal decomposition / conditions to be avoided</td>
<td>No decomposition if used according to specifications.</td>
</tr>
<tr>
<td>10.3 Possibility of hazardous reactions</td>
<td>No dangerous reactions known.</td>
</tr>
<tr>
<td>10.4 Conditions to avoid</td>
<td>No further relevant information available.</td>
</tr>
<tr>
<td>10.5 Incompatible materials</td>
<td>No further relevant information available.</td>
</tr>
<tr>
<td>10.6 Hazardous decomposition products</td>
<td>No dangerous decomposition products known.</td>
</tr>
</tbody>
</table>

### SECTION 11: Toxicological information

<table>
<thead>
<tr>
<th>11.1 Information on toxicological effects</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Fatal if swallowed.</td>
</tr>
<tr>
<td>Primary irritant effect:</td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)</td>
<td></td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>May cause genetic defects.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>May cause cancer.</td>
</tr>
</tbody>
</table>
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.
- Additional ecological information:
  - General notes: Not known to be hazardous to water.
  - 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

- 14.1 UN-Number
  - ADR, IMDG, IATA: UN3288
- 14.2 UN proper shipping name
  - ADR: 3288 TOXIC SOLID, INORGANIC, N.O.S.
  - IMDG: TOXIC SOLID, INORGANIC, N.O.S.
  - IATA: Toxic solid, inorganic, n.o.s.
- 14.3 Transport hazard class(es)
  - ADR
    - Class: 6
Trade name: cis-Dichlorodiammine platinum(II), 99% CISPLATIN

Label 6.1

IMDG, IATA

Class 6.1 Toxic substances.

Label 6.1

14.4 Packing group
ADR, IMDG, IATA II

14.5 Environmental hazards:
Marine pollutant: No

14.6 Special precautions for user
Not applicable.

Danger code (Kemler): 60
EMS Number: F-A,S-A
Stowage Category B

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code Not applicable.

Transport/Additional information:

ADR
Limited quantities (LQ) .5kg
Excepted quantities (EQ) Code: E4
Maximum net quantity per inner packaging: 1 g
Maximum net quantity per outer packaging: 500 g

Transport category 2
Tunnel restriction code D/E

IMDG
Limited quantities (LQ) .5kg
Excepted quantities (EQ) Code: E4
Maximum net quantity per inner packaging: 1 g
Maximum net quantity per outer packaging: 500 g

UN "Model Regulation": UN 3288 TOXIC SOLID, INORGANIC, N.O.S., 6.1, II

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
Qualifying quantity (tonnes) for the application of lower-tier requirements 50 t
Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t

National regulations:
Additional classification according to Decree on Hazardous Materials, Annex II:
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.

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
tPvB: very Persistent and very Bioaccumulative
Acute Tox. 2: Acute toxicity, Hazard Category 2
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Muta. 1A: Germ cell mutagenicity, Hazard Category 1A
Carc. 1A: Carcinogenicity, Hazard Category 1A
Repr. 1A: Reproductive toxicity, Hazard Category 1A