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

1.1 Product identifier

Product name: cis-Chlordane (alpha)

Part number: DRE-C11201000
CAS Number: 5103-71-9
EC number: 225-825-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

No further relevant information available.

Application of the substance / the mixture Reference material for laboratory use only

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:
LGC Limited
Queens Road
Teddington
Middlesex TW11 0LY
UNITED KINGDOM

Further information obtainable from:
Product safety department
eMail : sds-request@lgcgroup.com

1.4 Emergency telephone number: +44 (0) 20 8943 7000 (Monday - Friday : 8am - 5pm)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

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.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.

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)
Hazard pictograms

GHS07  GHS09

Signal word Warning

Hazard statements
H302+H332 Harmful if swallowed or if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves / eye protection / face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see on this label).
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Product name: cis-Chlordane (alpha)

- **After inhalation:**
  Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
  In case of unconsciousness place patient in recovery position for transport.
  Seek medical treatment.

- **After skin contact:**
  Immediately wash with water and soap and rinse thoroughly.
  If skin irritation continues, consult a doctor.

- **After eye contact:**
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

- **After swallowing:**
  Rinse mouth. Do not induce vomiting.
  Seek medical treatment.

- **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.

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**SECTION 5: Firefighting measures**

- **5.1 Extinguishing media**
  Suitable extinguishing agents: Use fire extinguishing methods suitable for surrounding conditions.

- **5.2 Special hazards arising from the substance or mixture**
  Formation of toxic gases is possible during heating or in case of fire.

- **5.3 Advice for firefighters**
  Protective equipment:
  - Mouth respiratory protective device.
  - Wear self-contained respiratory protective device.

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**SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures**
  Wear protective clothing.

- **6.2 Environmental precautions:**
  Inform respective authorities in case of seepage into water course or sewage system.
  Do not allow to enter sewers/ surface or ground water.

- **6.3 Methods and material for containment and cleaning up:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose of 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
  Ensure good ventilation/extraction at the workplace.
  Store in cool, dry place in tightly closed receptacles.
  Prevent formation of aerosols.
- Information about fire - and explosion protection: No special measures required.

- 7.2 Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and receptacles:
      Please refer to the manufacturer’s certificate for specific storage and transport temperature conditions.
      Store only in the original receptacle unless other advice is given on the CoA.
      Keep container in a well-ventilated place. Keep away from sources of ignition and heat.
    - Information about storage in one common storage facility: Store away from foodstuffs.
    - 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: Not required.
  - Additional information: Lists used were valid at the time of SDS preparation.

- 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.
      Avoid contact with the eyes and skin.
    - 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:
      The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
      Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
      The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374

  Protective gloves

- Material of gloves Fluorocarbon rubber (Viton)
Product name: cis-Chlordane (alpha)

· Penetration time of glove material
  The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:
  Tightly sealed goggles

SECTION 9: Physical and chemical properties

- General Information
  · Appearance:
    - Form: Liquid
    - Colour: Light yellow
  - Odour: Odourless
  - Odour threshold: Not determined.
  - pH-value: Not determined.

- Change in condition
  · Melting point/freezing point: 106-107 ºC
  · Initial boiling point and boiling range: Not determined.

- Flash point: Not applicable.

- Flammability (solid, gas): Not determined.

- Ignition temperature: Not determined.

- Decomposition temperature: Not determined.

- Auto-ignition temperature: Not determined.

- Explosive properties: Not determined.

- Explosion limits:
  · Lower: Not determined.
  · Upper: Not determined.

- Vapour pressure: Not determined.

- Density:
  - Relative density: Not determined.
  - Vapour density: Not determined.
  - Evaporation rate: Not determined.

- Solubility in / Miscibility with water: Not determined.
Product name: cis-Chlordane (alpha)

- Partition coefficient: n-octanol/water: Not determined.
- Viscosity:
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- 9.2 Other information
  No further relevant information available.

SECTION 10: Stability and reactivity

- 10.1 Reactivity
  Stable under normal conditions.
- 10.2 Chemical stability
  Stable under normal conditions.
- Thermal decomposition / conditions to be avoided:
  Formation of toxic gases is possible during heating or in case of fire.
- 10.3 Possibility of hazardous reactions
  No dangerous reactions known.
- 10.4 Conditions to avoid
  Heat.
- 10.5 Incompatible materials:
  Strong oxidizing agents.
- 10.6 Hazardous decomposition products:
  Formation of toxic gases is possible during heating or in case of fire.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity
  Harmful if swallowed or if inhaled.
- LD/LC50 values relevant for classification:
  Oral LD50 500 mg/kg (rat)
- Primary irritant effect:
- Skin corrosion/irritation
  Causes skin irritation.
- Serious eye damage/irritation
  Causes serious eye irritation.
- Respiratory or skin sensitisation
  Based on available data, the classification criteria are not met.
- CMR effects (carcinogenicity, 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
  Based on available data, the classification criteria are not met.
- STOT-single exposure
  Based on available data, the classification criteria are not met.
- STOT-repeated exposure
  Based on available data, the classification criteria are not met.
- Aspiration hazard
  Based on available data, the classification criteria are not met.
SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

<table>
<thead>
<tr>
<th>LC50/48</th>
<th>0.59 mg/l (daphnia)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50/96 h</td>
<td>0.09 mg/l (fish)</td>
</tr>
</tbody>
</table>

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.

12.5 Ecotoxicological effects:

Remark: Very toxic for fish

Additional ecological information:

General notes:
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms

12.6 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.7 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

European waste catalogue
Waste disposal key numbers from EWC have to be assigned depending on origin and processing.

Uncleaned packaging:
 Recommendation: Dispose of in accordance with national regulations.

SECTION 14: Transport information

14.1 UN-Number

ADR, IMDG, IATA UN3082
ADR 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (cis-Chlordane)
IMDG, IATA ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (cis-Chlordane)
**Safety data sheet**  
**according to 1907/2006/EC, Article 31**  

**Product name:** cis-Chlordane (alpha)  

### 14.3 Transport hazard class(es)

- **ADR, IATA**
  - Class 9  
  - Label 9 Miscellaneous dangerous substances and articles.

### 14.4 Packing group

- **ADR, IMDG, IATA**  
  - Class III

### 14.5 Environmental hazards:

- **Special marking (ADR):** Symbol (fish and tree)
- **Special marking (IATA):** Symbol (fish and tree)

### 14.6 Special precautions for user

- **Warning:** Miscellaneous dangerous substances and articles.
- **Danger code (Kemler):** 90
- **EMS Number:** F-A,S-F
- **Stowage Category:** A
- **Stowage Code:** SW2 Clear of living quarters.

### 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

- **Not applicable.**

### Transport/Additional information:

- **ADR**
  - **Limited quantities (LQ):** 5L  
  - **Excepted quantities (EQ):** Code: E1  
  - **Maximum net quantity per inner packaging:** 30 ml  
  - **Maximum net quantity per outer packaging:** 1000 ml
- **Transport category:** 3

- **UN "Model Regulation":**  
  - **UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CIS-CHLORDANE), 9, III**
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
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

The information in this safety data sheet (SDS) has been prepared with due care and is true and accurate to the best of our knowledge. The user must determine the suitability of the information for its particular purpose, ensure compliance with existing laws and regulations, and be aware that other or additional safety or performance considerations may arise when using, handling and/or storing the material. The information in this SDS does not purport to be all inclusive or a guarantee as to the properties of the material supplied, and should be used only as a guide. LGC makes no warranties or representations as to the accuracy and completeness of the information contained herein, shall not be held responsible for the suitability of this information for the user's intended purposes or the consequences of such use, and shall not be liable for any damage or loss, howsoever arising, direct or otherwise.

- 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)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  Acute Tox. 4: Acute toxicity – Category 4
  Skin Irrit. 2: Skin corrosion/irritation – Category 2
  Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
  Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
- Sources
  Data compared to the previous version altered, All sections have been updated.