Section 1. Chemical product and company identifications

**Product code:** D-3010  
**Chemical formula:** C₆D₆Cl₆  
**CAS:** 60556-82-3  
**CAS (unlabelled):** 58-89-9  
**Synonyms:** Lindane, γ-Benzene Hexachloride

**Supplier / Manufacturer:**
C/D/N Isotopes Inc.
88 Leacock Street
Pointe-Claire (Québec) H9R 1H1
Phone: 514-697-6254
Toll-Free (Canada & USA): 1-800-565-4696
Fax: 514-697-6148
Website: www.cdnisotopes.com

In case of emergency:
TOXYSCAN HOTLINE: 1-855-780-0599

Section 2. Hazards identifications

**Physical state:** Solid  
**Warning:** Toxic if swallowed. Fatal in contact with skin. Harmful if inhaled.

**Routes of entry:** Inhalation, ingestion, skin and eyes

**GHS (Globally Harmonized System of Classification and Labelling of Chemicals):**

**GHS Classification:**  
- Acute toxicity, Oral (Category 3)  
- Acute toxicity, Inhalation (Category 4)  
- Acute toxicity, Dermal (Category 2)  
- Carcinogenicity (Category 1A)  
- Effects on or via lactation  
- Specific target organ toxicity - repeated exposure (Category 2)

**GHS Label elements:**  
- Pictograms: 🛠️ ⚠️ 🤕
- Signal word: Danger

**Hazards statement:**  
- H301 Toxic if swallowed.  
- H310 Fatal in contact with skin.  
- H332 Harmful if inhaled.  
- H350 May cause cancer.  
- H362 May cause harm to breast-fed children.  
- H373 May cause damage to organs through prolonged or repeated exposure.

**Precautionary statement:**  
- P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
- P302 + P350 IF ON SKIN: Wash with plenty of soap and water.  
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
- P316 Get emergency medical help immediately.

Section 3. Composition and information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS</th>
<th>Concentration %</th>
</tr>
</thead>
<tbody>
<tr>
<td>γ-1,2,3,4,5,6-Hexachlorocyclohexane-d₆</td>
<td>60556-82-3</td>
<td>&gt; 98</td>
</tr>
</tbody>
</table>
Section 4. First aid measures

**Eye contact:** Flush eyes with water as a precaution.
**Skin contact:** Wash off with soap and plenty of water. Consult a physician.
**Inhalation:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
**Ingestion:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Section 5. Firefighting measures

**Flammability of the product:** Not flammable or combustible.
**Lower explosion limit:** No data available.
**Upper explosion limit:** No data available.
**Auto-ignition temperature:** No data available.
**Flash point:** No data available.
**Products of combustion:** Hazardous decomposition products formed under fire conditions: Carbon oxides, hydrogen chloride gas.
**Firefighting media and instructions:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
**Special protective equipment for firefighters:** Wear self-contained breathing apparatus for firefighting if necessary.

Section 6. Accidental release measures

**Personal precautions:** Use personal protective equipment. Avoid dust formation. Ensure adequate ventilation. Avoid breathing dust.
**Environmental precautions:** Do not let product enter drains. Discharge into the environment must be avoided.
**Methods for cleaning up:** Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

Section 7. Handling and storage

**Handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation.
**Storage:** Store at room temperature. Adequate ventilation.

Section 8. Exposure Controls, Personal Protections

**Engineering controls:** Use mechanical exhaust or laboratory fumehood to avoid exposure.
**Eyes:** Safety glasses with side-shields conforming to NIOSH (US) or EN 166 (EU).
**Respiratory:** Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US).
**Hands:** Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
**Skin/body:** Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Section 9. Physical and chemical properties (unlabelled)

**Molecular weight:** 290.83 g/mol
**Physical status:** Solid
**Color:** White to off-white
**Odour:** No data available
**Density:** No data available
**Melting point:** 113 - 115 ºC (235 - 239 ºF)
**Boiling point:** 323 ºC (613 ºF)
**Vapour pressure:** No data available
**Vapour density:** No data available
**Partition coefficient (octanol/water):** log Pow: 3.72
**Water solubility:** 7.3 mg/L

Section 10. Stability and reactivity

**Stability and reactivity:** Stable under recommended storage conditions.
**Incompatibility:** Strong oxidizing agents.
**Products of combustion:** Hazardous decomposition products formed under fire conditions: Carbon oxides, hydrogen chloride gas.
**Reactivity conditions:** No data available.
Section 11. Toxicological information (unlabelled)

**Toxicological data:** Lindane

**Information on ingredients:**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS</th>
<th>LD&lt;sub&gt;50&lt;/sub&gt;</th>
<th>LC&lt;sub&gt;50&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lindane</td>
<td>58-89-9</td>
<td>Oral - Rat - 76 mg/kg</td>
<td>Inhalation - Rat - 4 h - 1,560 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dermal - Rabbit - 50 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

**Potential acute effects**

- **Eyes:** May cause eye irritation.
- **Skin:** Fatal if absorbed through skin. May cause skin irritation.
- **Inhalation:** Harmful if inhaled. May cause respiratory tract irritation.
- **Ingestion:** Toxic if swallowed.

**Potential chronic effects**

- **Carcinogenic effects:** This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. IARC: 1 - Group 1: Carcinogenic to humans (γ-1,2,3,4,5,6-Hexachlorocyclohexane). ACGIH: A3 - Animal carcinogen.
- **Mutagenic effects:** No data available.
- **Teratogenic effects:** Effects on or via lactation.
- **Medical conditions aggravated by overexposure:** No data available.

Section 12. Ecological information

**Ecological data:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Results</th>
<th>Species</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lindane</td>
<td>0.2 mg/l LC50</td>
<td>Cyprinus carpio</td>
<td>96 h</td>
</tr>
<tr>
<td></td>
<td>0.9 - 1.3 mg/l LC50</td>
<td>Cyprinodon variegatus</td>
<td>96 h</td>
</tr>
<tr>
<td></td>
<td>0.038 mg/l LC50</td>
<td>Oncorhynchus mykiss</td>
<td>96 h</td>
</tr>
<tr>
<td></td>
<td>0.8 - 6.50 mg/l EC50</td>
<td>Daphnia magna</td>
<td>48 h</td>
</tr>
<tr>
<td></td>
<td>4.00 mg/l EC50</td>
<td>Algae</td>
<td>72 h</td>
</tr>
</tbody>
</table>

**Effects on environment:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**Mobility:** No data available.

**Environmental precautions:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulative potential:** Pimephales promelas - 304 d - 9.1 µg/l. Bioconcentration factor (BCF): 674.

Section 13. Disposal considerations

**Waste disposal:** Contact a licensed professional waste disposal service to dispose of this material.

Section 14. Transportation information

**Classification DOT/IMDG/IATA label:**

**Shipping name:** Organochlorine pesticide, solid, toxic (γ-Hexachlorocyclohexane)

**UN number:** UN2761

**Class:** 6.1

**Packaging group:** III

**Additional information:** None
Section 15. Regulatory information

UNITED STATES:

NFPA classification

Health: 3
Flammable: 0
Reactivity: 0
Special conditions: None

Legend: 4: Severe, 3: High, 2: Moderate, 1: Slightly, 0: Not hazardous

U.S. Federal regulations:

TSCA 8(b) inventory: Lindane
SARA 302/304/311/312 extremely hazardous substances: Not Listed
SARA 302/304 emergency planning and notification: Not Listed
SARA 302/304/311/312 hazardous chemicals: Not Listed
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard: Not Listed
CWA (Clean Water Act) 307: Not Listed
CWA (Clean Water Act) 311: Not Listed
CAA (Clean Air Act) 112 accidental release prevention: Not Listed
CAA (Clean Air Act) 112 regulated flammable substances: Not Listed
CAA (Clean Air Act) 112 regulated toxic substances: Not Listed

State regulations:

DEA List I Chemicals (Precursor Chemicals): Not Listed
DEA List II Chemicals (Essential Chemicals): Not Listed
Substances in Massachusetts: Listed
Dangerous substances in New Jersey: Listed
New York – Dangerous substances with acute effects: Not Listed
Dangerous substances in Pennsylvania – right to know: Listed

WHMIS (Canada):

D1A - Very toxic material causing immediate and serious toxic effects
D1B - Toxic material causing immediate and serious toxic effects
D2A - Very toxic material causing other toxic effects
D2B - Toxic material causing other toxic effects

Section 16. Additional information

References:
- Manufacturer’s Material Safety Data Sheet.
- 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. -Canada
- Federal act on the controlled products
- Toxicological repertory, HSC.
- Material safety data sheet from the components.

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Elaborated by: Toxyscan Inc., 1-866-780-0599

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