1 Identification

· Product identifier
  · Trade name: Heptachlor Neat
  · Part number: CUS-PST-571
  · CAS Number: 76-44-8
  · EC number: 200-962-3
  · Index number: 602-046-00-2
· Application of the substance / the mixture Laboratory chemicals
· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier: ULTRA Scientific, Inc.
    250 Smith Street
    North Kingstown, RI 02852
    USA
  · Information department:
    Telephone: (401) 294-9400
    Fax: (401) 295-2300
    E-mail: regulatory@ultrasci.com
  · Emergency telephone number:
    US: +1-800-424-9300
    Outside US: +1-703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture
  · GHS06 Skull and crossbones
    Acute Tox. 3 H301 Toxic if swallowed.
    Acute Tox. 3 H311 Toxic in contact with skin.
  · GHS08 Health hazard
    Carc. 2 H351 Suspected of causing cancer.
    STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

· 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

(Contd. on page 2)
Trade name: Heptachlor Neat

- Hazard-determining components of labeling:
  heptachlor (ISO)

- Hazard statements
  Toxic if swallowed or in contact with skin.
  Suspected of causing cancer.
  May cause damage to organs through prolonged or repeated exposure.

- Precautionary statements
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Do not breathe dust/fume/gas/mist/vapors/spray.
  Wash thoroughly after handling.
  Do not eat, drink or smoke when using this product.
  Wear protective gloves/protective clothing/eye protection/face protection.
  If swallowed: Immediately call a poison center/doctor.
  If on skin: Wash with plenty of water.
  IF exposed or concerned: Get medical advice/attention.
  Call a poison center/doctor if you feel unwell.
  Get medical advice/attention if you feel unwell.
  Specific treatment (see on this label).
  Rinse mouth.
  Take off immediately all contaminated clothing and wash it before reuse.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
  - NFPA ratings (scale 0 - 4)
    Health = 3
    Fire = 0
    Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    HEALTH = 3
    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
  76-44-8 heptachlor (ISO)
- Identification number(s)
- EC number: 200-962-3
- Index number: 602-046-00-2
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.
  In case of irregular breathing or respiratory arrest provide artificial respiration.
- After inhalation: 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; 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: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture
  During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
- Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures Mount respiratory protective device.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- 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.
- Protective Action Criteria for Chemicals
  - PAC-1: 0.15 mg/m³
  - PAC-2: 14 mg/m³
  - PAC-3: 700 mg/m³
7 Handling and storage

- **Handling:**
  - **Precautions for safe handling**
  Thorough dedusting.
  Ensure good ventilation/exhaustion at the workplace.
  Open and handle receptacle with care.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **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.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**

<table>
<thead>
<tr>
<th>76-44-8 heptachlor (ISO)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PEL</strong> Long-term value: 0.5 mg/m³</td>
</tr>
<tr>
<td>Skin</td>
</tr>
<tr>
<td><strong>REL</strong> Long-term value: 0.5 mg/m³</td>
</tr>
<tr>
<td>Skin; See Pocket Guide App. A</td>
</tr>
<tr>
<td><strong>TLV</strong> Long-term value: 0.05 mg/m³</td>
</tr>
<tr>
<td>Skin</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.
  Avoid contact with the eyes and skin.
- **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

- **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: Solid
    Color: Not determined.
  - Odor:
    Odor: Characteristic
    Odor threshold: Not determined.
  - pH-value: Not applicable.
- Change in condition
  Melting point/Melting range: 95-96 °C (203-204.8 °F)
  Boiling point/Boiling range: 117-156 °C (242.6-312.8 °F)
- Flash point: Not applicable.
- Flammability (solid, gaseous): Product is not flammable.
- 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 at 20 °C (68 °F): 0.0004 hPa (0 mm Hg)
- Density at 20 °C (68 °F): 1.58 g/cm³ (13.1851 lbs/gal)
  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.
  VOC content: 0.00 %
  0.0 g/l / 0.00 lb/gl
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: |
|------------------|------------------|
|                  |
| ATE (Acute Toxicity Estimate) |
| Oral | LD50 | 40 mg/kg (rat) |
| Dermal | LD50 | 119 mg/kg (rat) |

76-44-8 heptachlor (ISO)

| Oral        | LD50 | 40 mg/kg (rat) |
| Dermal      | LD50 | 119 mg/kg (rat) |

· Primary irritant effect:
  · on the skin: No irritant effect.
  · on the eye: No irritating effect.
  · Sensitization: No sensitizing effects known.
· Additional toxicological information:

· Carcinogenic categories

<table>
<thead>
<tr>
<th>IARC (International Agency for Research on Cancer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2B</td>
</tr>
</tbody>
</table>

· 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.
Trade name: Heptachlor Neat

- Additional ecological information:

- General notes:
  Water hazard class 3 (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.

- 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

<table>
<thead>
<tr>
<th>UN-Number</th>
<th>DOT, IMDG, IATA</th>
<th>UN2811</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>DOT</td>
<td>IMDG</td>
</tr>
<tr>
<td>Toxic solids, organic, n.o.s. (heptachlor (ISO))</td>
<td>TOXIC SOLID, ORGANIC, N.O.S. (heptachlor (ISO)), MARINE POLLUTANT</td>
<td></td>
</tr>
<tr>
<td>IATA</td>
<td>TOXIC SOLID, ORGANIC, N.O.S. (heptachlor (ISO))</td>
<td></td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>DOT</td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>6.1 Toxic substances</td>
<td></td>
</tr>
<tr>
<td>Label</td>
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<td></td>
</tr>
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<td>Class</td>
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<td>Label</td>
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</tr>
<tr>
<td>Packing group</td>
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</tr>
<tr>
<td>DOT, IMDG, IATA</td>
<td>II</td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant:</td>
<td>Symbol (fish and tree)</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Warning: Toxic substances</td>
</tr>
<tr>
<td>Danger code (Kemler):</td>
<td>60</td>
</tr>
<tr>
<td>EMS Number:</td>
<td>F-A,S-A</td>
</tr>
<tr>
<td>Stowage Category</td>
<td>B</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Transport/Additional information:</td>
<td></td>
</tr>
<tr>
<td>DOT</td>
<td></td>
</tr>
<tr>
<td>Quantity limitations</td>
<td>On passenger aircraft/rail: 25 kg</td>
</tr>
<tr>
<td>Hazardous substance:</td>
<td>1 lbs, 0.454 kg</td>
</tr>
<tr>
<td>IMDG</td>
<td></td>
</tr>
<tr>
<td>Limited quantities (LQ)</td>
<td>500 g</td>
</tr>
<tr>
<td>Excepted quantities (EQ)</td>
<td>Code: E4</td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging:</td>
<td>1 g</td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging:</td>
<td>500 g</td>
</tr>
<tr>
<td>UN &quot;Model Regulation&quot;:</td>
<td>UN 2811 TOXIC SOLIDS, ORGANIC, N.O.S. (HEPTACHLOR (ISO)), 6.1, II, ENVIRONMENTALLY HAZARDOUS</td>
</tr>
</tbody>
</table>

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 listed.
- TSCA (Toxic Substances Control Act): Substance is not listed.
- TSCA new (21st Century Act) (Substances not listed) Proposition 65
- Chemicals known to cause cancer: Substance is listed.
### Trade name: Heptachlor Neat

<table>
<thead>
<tr>
<th>· Chemicals known to cause reproductive toxicity for females:</th>
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<tr>
<th>· Carcinogenic categories</th>
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<tbody>
<tr>
<td>· EPA (Environmental Protection Agency)</td>
</tr>
<tr>
<td>EPA: B2</td>
</tr>
<tr>
<td>· TLV (Threshold Limit Value established by ACGIH)</td>
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<td>TLV: A3</td>
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<thead>
<tr>
<th>· NIOSH-Ca (National Institute for Occupational Safety and Health)</th>
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<td>GHS06</td>
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<tr>
<th>· Signal word</th>
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<tr>
<th>· Chemical safety assessment:</th>
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<tbody>
<tr>
<td>A Chemical Safety Assessment has not been carried out.</td>
</tr>
</tbody>
</table>

(Contd. on page 8)
Trade name: Heptachlor Neat

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:** Document Control / Regulatory
- **Contact:** regulatory@ultrasci.com
- **Date of preparation / last revision** 04/20/2018 / 2
- **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. 3: Acute toxicity – Category 3
  - Carc. 2: Carcinogenicity – Category 2
  - STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
- * Data compared to the previous version altered.*