No specific antidote exists.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:
As in any fire, use a self-contained breathing apparatus in pressure demand. MSHA/NIOSH approved or equivalent, and full protective gear. Vapors can travel a source of ignition and flash back. Extremely flammable. Material will readily ignite at room temperature. Use water spray to keep fire-exposed containers cool.

Extinguishing Media:
Use foam, dry chemical, or carbon dioxide. Water may be ineffective. This material is lighter than water and insoluble in water. The fire could easily spread by the use of water in an area where the water cannot be contained.

Autoignition Temperature: 473 F (245.0 C)
Flash Point: -4 F (-17.78 C)
NFPA Rating: 1-hazard; 4-flammability; 0-reactivity
Explosion Limits: 1 Reagent Lane, Lower: 1.3
Upper: 8.0

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Absorb spill with inert material (e.g., dry sand or earth), then place into a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Wear a self-contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Scoop up with a nonsparking tool, then place into a suitable container for disposal. Remove all sources of ignition.

**** SECTION 7 - HANDLING AND STORAGE ****

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Do not re-use this container. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Do not puncture, cut, weld, braze, solder, drill, grind, or expose such containers to heat, sparks or open flames. Keep container tightly closed. Avoid contact with heat, sparks and flame. Do not get on skin or in eyes. Avoid ingestion and inhalation.

Storage:
Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclohexane</td>
<td>300 ppm</td>
<td>1030</td>
<td>300 ppm TWA; 1050</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs:
Cyclohexane 300 ppm TWA; 1050 mg/m3 TWA

Personal Protective Equipment

Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29CFR 1910.133.

Skin:
Wear neoprene gloves, apron, and/or clothing. Wear nitrile-latex gloves, apron, and/or clothing.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
Follow the OSHA respirator regulations found in 29CFR 1910.134. Always use a NIOSH-approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Liquid
Appearance: Colorless liquid
Odor: Sweet chloroform-like
pH: Not available.
Vapor Pressure: 95 mm Hg.
Vapor Density: 0.7738 at 98.6°F.
Evaporation Rate: 9.1 (Butyl acrylate=1).
Viscosity: 1.02 cp at 63°F.
Boiling Point: 177.3°F
Freezing/Melting Point: 44°F
Decomposition Temperature: Not available.
Solubility: Practically insoluble in water.
Specific Gravity/Gravity: 0.9 (Water=1).
Molecular Formula: C12H24C2H12
Molecular Weight: 184.384

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Incompatible materials, ignition sources.

Incompatibilities with Other Materials: Incompatible with oxidizing materials.

Hazardous Decomposition Products: Oxides of carbon.

Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTCS#: CAS# 110-82-7;
GL50/CAS#: 110-82-7: Oral, mouse: LD50 = 813 mg/kg; Oral, rat: LD50 = 12705 mg/kg.
Carcinogenicity: Cyclohexane - Not listed by IARC, NIOSH, NTP, or OSHA.
Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Neurotoxicity: No information available.
Mutagenicity: No information available.
DNA damage: E. coli, 10 umol/L
Other Studies: None.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity: For fish, minnow, LC50 = 95 mg/L/1H at 7-22°C, Bluegill, TLM = 53-34 mg/L/24-96H Goldfish, TLM = 42.3 mg/L/24-96H
Environmental Fate: In air, substance reacts with hydroxyl radicals.
Physical/Chemical: No information available.
Other: None.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.
RCRA D-Series Chronic Toxicity Reference Levels: Not listed.
RCRA P-Series: Not listed.
RCRA U-Series: waste number US65 (ignitable waste)
This material is banned from land disposal according to RCRA.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
Shipping Name: CYCLOHEXANE
Hazard Class: 3
UN Number: UN1145
Packing Group: II
IMO: Not available.
IATA: Not available.
RID/ADR: Not available.
Canadian TDG: Shipping Name: CYCLOHEXANE
Hazard Class: 3 (B)
UN Number: UN1145
Other information: FLASHPOINT -20 C

**** SECTION 15 - REGULATORY INFORMATION ****

FEDERAL
TSCA: CAS# 110-82-7 is listed on the TSCA Inventory.

Health & Safety Reporting List
CAS# 110-82-7 Effective Date: December 19, 1985
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 112
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

SARA
Section 302: Not applicable.
Section 313: This material contains Cyclohexane (CAS# 110-82-7, 99%), which is subject to the reporting requirements of Section 313 of SARA Title 40 CFR Part 372.

Clean Air Act: This material does not contain any hazardous air pollutants. This material does not contain any Class 1 volatile organic compounds. This material does not contain any Class 2 volatile organic compounds.

Clean Water Act: CAS# 110-82-7 is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA.

OSHA: None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
Cyclohexane can be found on the following state right to know lists: California, Florida, Pennsylvania, Minnesota, Massachusetts, and New Jersey.

INTERNATIONAL
European Labeling in Accordance with EC Directives
Hazard Symbols: F
Risk Phrases: S16 Keep away from sources of ignition - No smoking
S23 Take precautions measures against static discharges
S9 Keep container in a well-ventilated place.

Canada: CAS# 110-82-7 is listed on Canada’s DSL/NDSL List.

Exposure Limits: CAS# 110-82-7: OEL-DEUER: TWA 300 ppm (1505 mg/m³); TWA-DEUER: 300 ppm (1030 mg/m³); OEL-UK: TWA 300 ppm (1505 mg/m³); TWA-UK: 300 ppm (1005 mg/m³); TWA: 300 ppm (1050 mg/m³); STEL: 300 ppm (1050 mg/m³); OEL-SWITZER: TWA 300 ppm (1000 mg/m³); STEL: 300 ppm (1000 mg/m³); OEL-SLOVAK: TWA 300 ppm (1000 mg/m³); STEL: 300 ppm (1000 mg/m³); OEL-LITU: TWA 300 ppm (1050 mg/m³); TWA: 300 ppm (1050 mg/m³); STEL: 300 ppm (1050 mg/m³); OEL-HUNGARY: TWA 300 ppm (1000 mg/m³); STEL: 300 ppm (1000 mg/m³); OEL-JAPAN: TWA 150 ppm (520 mg/m³); OEL-TH: TWA 300 ppm (1000 mg/m³); TWA: 300 ppm (1000 mg/m³); TWA: 300 ppm (1000 mg/m³); STEL: 300 ppm (1000 mg/m³); OEL: 150 ppm (520 mg/m³); OEL-INDIA: TWA 300 ppm (1000 mg/m³); TWA: 300 ppm (1000 mg/m³); STEL: 300 ppm (1000 mg/m³);

**** SECTION 16 - ADDITIONAL INFORMATION ****

Additional Information: No additional information available.

MSDS Creation Date: 12/16/1994 Revision #: 5/14/1996

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