

# G.J. CHEMICAL COMPANY, INC. SAFETY DATA SHEET

## 1. PRODUCT IDENTIFIER

1.1 PRODUCT NAME:-----> **CYCLOHEXANOL**

PRODUCT NUMBER(S):-----> 130500

TRADE NAMES/SYNONYMS: ----> Cyclohexanol

CAS-No: 108-93-0            Chemical Family: Cyclic Alkane Alcohol

### 1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

RECOMMENDED USE: Industrial: Intermediate for Adipic Acid and Caprolactam production, Solvent, Manufacture of coated paper, Laboratory chemicals.

USES ADVISED AGAINST: No information available

### 1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company: **G.J. CHEMICAL CO., INC.**

Address: **40 VERONICA AVENUE  
SOMERSET, NJ 08873**

Telephone: **1-973-589-1450**

Fax: **1-973-589-3072**

### 1.4 Emergency Telephone Number

Emergency Phone: **1-800-424-9300 (CHEMTREC)**

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

GHS Classification in accordance with 29CFR 1910 (OSHA HCS)

Flammable liquids (Category 4), H227

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 4), H332

Acute toxicity, Dermal (Category 4), H312

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Specific target organ toxicity - single exposure (Category 3), Respiratory System, H335

Acute aquatic toxicity (Category 3), H402

Chronic aquatic toxicity (Category 3), H412

## 2.2 GHS Label elements, including precautionary statements



Pictogram

GHS07

Signal word: **WARNING**

Hazard statement(s)

H227 Combustible Liquid

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H402 Harmful to aquatic life.

H412 Harmful to aquatic life with long-lasting effects.

Precautionary statement(s)

Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell

P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician 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.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - May form explosive peroxides.

### 3. INGREDIENTS

#### 3.1 SUBSTANCE:

Ingredient	CAS No.	% by WT. Range	CLASSIFICATION
Cyclohexane	108-93-0 EC-No.203-630-6 Index No.603-009-00-3 Reg.No.01-2119447488-26-XXXX	99.9	Flammable liquids (Category 4), H227 Acute toxicity, oral (Category 4), H302 Acute toxicity, inhalation (Category, H332 Acute toxicity, dermal (Category 4), H312 Skin irritation (Category 2), H315 Eye irritation (Category 2A), H319 STOT-SE (Category 3) Respiratory System, H335 Acute aquatic toxicity (Category 3), H402 Chronic aquatic toxicity (Category 3), H412

3.2 MIXTURE: Not applicable.

### 4. FIRST-AID MEASURES

#### 4.1 DESCRIPTION OF FIRST AID MEASURES:

INHALATION: CYCLOHEXANOL:

**\*\*FIRST AID- Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.**

**SKIN CONTACT: CYCLOHEXANOL:**

**\*\*FIRST AID- Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.**

**EYE CONTACT: CYCLOHEXANOL:**

**\*\*FIRST AID- Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15-20 minutes). Remove contact lenses, if worn, after initial flush. Get medical attention immediately.**

**INGESTION: CYCLOHEXANOL:**

**\*\*FIRST AID- Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Small amounts, which enter the mouth should be rinsed out until taste is gone. Get medical attention immediately.**

**4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:**

**Eye:** May cause irritation; Vapors are mildly irritating to eyes.

**Skin:** Causes moderate irritant; May be absorbed through skin.

**Inhalation:** Irritation of the respiratory tract or acute nervous system depression characterized by headache, dizziness, staggering gait, confusion, unconsciousness or coma;

**Ingestion:** Moderately toxic, may irritate the mouth, throat and gastro-intestinal tract. Pulmonary aspiration hazard if swallowed and vomiting occurs.

**Chronic:** Headache, Nausea, Tremors, Incoordination, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Vomiting.

**Medical Conditions Aggravated by Exposure:** Skin contact may aggravate an existing dermatitis. Inhalation may aggravate respiratory diseases e.g. Asthma. Other pre-existing medical conditions aggravated by exposure - disorders of the eye.

**4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:**

Specific details on antidote: No recommendation given.

## **5. FIRE FIGHTING MEASURES**

Flash Point: 68°C (154°F) - closed cup      LEL %: 1.25 (V)  
Auto-ignition Temp: 300°C (572°F)      UEL %: 12.25 (V)  
UNIFORM FIRE CODE: Combustible Liquid Class IIIA

**5.1 SUITABLE EXTINGUISHING MEDIA:** Foam--> x CO2--> x Dry Chemical-->  
x Water-fog--> x Other-->

Unsuitable extinguishing media: Do not use waterjet.

**5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:** FIRE AND EXPLOSION HAZARD: DANGEROUS FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME. VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL A CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK. VAPOR-AIR MIXTURES ARE EXPLOSIVE. Keep containers tightly closed. Flammable liquid; isolate from all sources of ignition. Closed containers may explode when exposed to extreme heat.

**CONDITIONS OF FLAMMABILITY:** Combustible in the presence of a source of ignition when the temperature is above the flash point.

**HAZARDOUS COMBUSTION PRODUCTS:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, carbon oxides and other unidentified organic compounds evolve when this material undergoes combustion.

**5.3 ADVICE FOR FIREFIGHTERS:** Shut off source. Water fog may be used to cool closed containers to prevent pressure build up and possible auto ignition or explosion when exposed to extreme heat. Wear NIOSH/MSHA approved self-contained breathing apparatus (SCBA) for confined spaces and where there is exposure to vapors. Use full fire-fighting protective clothing. Keep unnecessary people away; isolate hazard area and deny entry. Avoid breathing vapors, stay upwind. Do not enter fire area without structural fire fighter's protective equipment including NIOSH/MSHA approved self-contained breathing apparatus (SCBA) in positive pressure mode. Use water spray to knock down vapors. Use halon, carbon dioxide extinguisher or dry powder for small fires. Large fires are best controlled by alcohol foam, fog, and water spray. Move container from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Stay away from ends of tanks. For massive fire in cargo area, use unmanned hose holder or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire. Isolate for 1/2 mile in all directions if tank, rail car or tank truck is involved in fire Extinguish only if fire can be stopped. Use flooding amounts of water as a fog; solid streams may be ineffective. Cool containers with flooding amounts of water from as far a distance as possible.

Avoid breathing vapors; keep upwind. If fire is uncontrollable or containers are exposed to direct flame, water may be ineffective. Water may be used to flush spills away from exposures and to dilute spills to non-flammable mixtures.

## **6. ACCIDENTAL RELEASE MEASURES**

**6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:** Combustible Liquid; Eliminate ignition sources in the vicinity of the spill or released vapor. Vapors can accumulate in low areas. Immediately evacuate all nonessential people. Verify that responders are properly trained and wearing appropriate NIOSH/MSHA approved positive pressure self-contained respiratory (SCBA) equipment and fire resistant protective clothing during cleanup operations.

### **6.2 ENVIRONMENTAL PRECAUTIONS:**

Keep out of water sources, drains and sewers. Do not flush into surface water or sanitary sewer system

### **6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:**

Methods for cleanup and containment:

Use explosion proof equipment. Shut off valves, contain spill, keep out of water sources and sewers, for smaller spills add non-flammable absorbent in spill area.

For large spills use foam on spill to minimize vapors clean up by vacuuming then using non-flammable absorbent.

Methods for disposal:

Place all saturated absorbent, using non-sparking tools, in an approved container for disposal. Minimize breathing vapors and skin contact, ventilate confined areas, open all windows and doors, assure conformity with applicable government regulations.

**6.4 REFERENCE TO OTHER SECTIONS:** See Sections 8 and 13.

## **7. HANDLING AND STORAGE**

**7.1 PRECAUTIONS FOR SAFE HANDLING:** This material presents a fire hazard. Liquid quickly evaporates and forms vapor (fumes), which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources, such as pilot lights, welding equipment, and electrical motors and switches. Vapor is heavier than air and can travel considerable distance to a source of ignition and flash back. Avoid breathing vapors in top of shipping container. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid work practices that may release volatile components in the atmosphere. Avoid contaminating soil or releasing material into sewage and drainage systems. Use non-sparking tools to open or close containers.

Advice on general occupational hygiene:

Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs. When using do not smoke.

**STATIC HAZARD:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not be sufficient. For more information refer to OSHA Standard 29CFR 1910.106 “Flammable and Combustible Liquids” and National Fire Protection Association (NFPA 77) “Recommended Practice on Static Electricity”.

**7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:**

Follow maximum allowed pile heights specified in the BOCA codes or the NFPA manual. Local fire authorities should be notified for storage of this material in any quantity. Local permits are required for storage in warehouse quantities. Recommended storage temperature: 15 - 25°C. Store large quantities only in cool, dry areas in buildings designed to comply with OSHA 1910.106. Store under inert gas. Keep containers tight and upright to prevent leakage. Do not contact with oxidizing materials. Keep containers closed when not in use. Do not take internally. Storage class (TRGS 510): 10: Combustible liquids

**CONTAINER WARNINGS:** Containers should be Bonded and Grounded when pouring. Avoid free fall of liquid in excess of a few inches. Empty containers release residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, or expose such containers to heat, sparks, static electricity or other sources of ignition. Do not attempt to clean. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum re-conditioner.

**7.3 SPECIFIC END USES:** Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

**8. EXPOSURE CONTROL (PERSONAL PROTECTION)**

**8.1 CONTROL PARAMETERS:**

Ingredient	CAS No.	% by WT. Range	Exposure Limits
Cyclohexane	110-82-7 EC-No.203-630-6 Index No.603-009-00-3 Reg.No.01-2119447488-26-XXXX	99.9	50ppm TWA (ACGIH) 50ppm TWA (NIOSH) 50ppm TWA (OSHA)

Key: (PEL) = Permissible Exposure Limit OSHA  
(TLV) = Threshold Limit Value OSHA & ACGIH  
(STEL) = Short Term Exposure Limit ACGIH

(WEEL) = USA. Workplace Environmental Exposure Levels  
(TWA) = Time Weighted Average  
CAS = Chemical Abstracts Registry Number  
IDLH = Immediate Danger to Life and Health  
N.E. =None Established

## **8.2 EXPOSURE CONTROLS**

**EXPOSURE GUIDELINES:** Consider the potential hazards of this material (Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended.

**ENGINEERING CONTROLS:** Provide general dilution or local exhaust ventilation in volume and pattern to keep concentrations within permitted exposure limits. All areas should be ventilated in accordance with OSHA Regulation 29 CFR Part 1910. Explosion proof motors should be used in mechanical ventilation.

**RESPIRATORY PROTECTION:** The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA):

For known vapor concentrations use a NIOSH/MSHA air purifying respirator with full face-piece and organic vapor cartridge for exposures  $>1 <10$  times ACGIH TWA. For exposures greater than 10 times ACGIH TWA or for unknown vapor concentrations use NIOSH/MSHA approved positive pressure self-contained breathing apparatus (SCBA) with full face-piece.

**BODY CLOTHING:** Use chemical resistant apron or other impervious clothing. Remove and wash contaminated clothing before reuse. Users should determine acceptable performance characteristics of protective clothing.

**SKIN PROTECTION:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 480 min

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 60 min



**HYGIENE:** Use good personal hygiene practices, wash hands before eating, drinking, smoking or using toilet facilities.

**EYE /FACE PROTECTION:** Use safety eyewear with splash-guards or face shield. Shower and eyewash should be located in an easily accessible location to the work area.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

### **9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:**

Cyclohexanol 108-93-0

<b>APPEARANCE:</b>	Clear liquid
<b>COLOR:</b>	Colorless
<b>ODOR:</b>	No data available
<b>ODOR THRESHOLD:</b>	No data Available
<b>pH:</b>	6.5 40g/L 20°C (68.0°F)
<b>MOLECULAR WEIGHT:</b>	100.16 amu
<b>MELTING POINT:</b>	20-22°C (68 - 72°F)
<b>BOILING POINT:</b>	160-161°C (320-322°F)
<b>SPECIFIC GRAVITY:</b>	0.948@25°C (77°F)
<b>VAPOR PRESSURE:</b>	0.98mmHg @ 25°C (77°F)
<b>VAPOR DENSITY:</b>	4.01
<b>WATER SOLUBILITY:</b>	No data available
<b>PARTITION COEFFICIENT N-OCTANOL/WATER</b>	log Pow: 1.25 @ 25°C (77°F)
<b>FLASH POINT:</b>	68°C (154°F) - closed cup
<b>EVAPORATION RATE (BUTYL ACETATE=1):</b>	No data available
<b>UPPER FLAMMABILITY LIMIT:</b>	12.25% (V)
<b>LOWER FLAMMABILITY LIMIT:</b>	1.25% (V)
<b>AUTO IGNITION TEMPERATURE:</b>	300°C (572°F)
<b>DECOMPOSITION TEMPERATURE:</b>	No data Available
<b>VISCOSITY:</b>	No data Available
<b>EXPLOSIVE PROPERTIES:</b>	No data Available
<b>OXIDIZING PROPERTIES:</b>	No data Available

**9.2 OTHER INFORMATION:** No data Available

## **10. STABILITY AND REACTIVITY INFORMATION**

**10.1 REACTIVITY:** No data available.

**10.2 CHEMICAL STABILITY:** Unstable ( ) Stable (X)  
Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year. Stable under recommended storage conditions.

**10.3 POSSIBILITY OF HAZARDOUS REACTIONS:** Vapors may form explosive mixtures with air.

**HAZARDOUS POLYMERIZATION:** May occur ( ) Will not occur (X)

**10.4 CONDITIONS TO AVOID:** Heat, Sparks, Pilot Lights, Static Electricity, and Open Flame.

**10.5 INCOMPATIBLE MATERIALS:** Strong oxidants such as liquid chlorine, oxygen, sodium hypochlorite, inorganic acids e.g. hydrochloric acid and hydrogen peroxide.

**10.6 HAZARDOUS DECOMPOSITION PRODUCTS:** Fumes, Smoke, Carbon Monoxide, Aldehydes and other decomposition products where combustion is not complete.

## **11. TOXICOLOGICAL INFORMATION**

### **11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:**

Routes of Entry: Inhalation--> x Skin--> x Ingestion--> x

#### **ACUTE HEALTH EFFECTS:**

Effects of overexposure:

**Eye>** May cause irritation; Vapors are mildly irritating to eyes.

**Skin>** Causes moderate irritant; Can be absorbed through skin.

**Inhalation>** Irritation of the respiratory tract or acute nervous system depression characterized by headache, dizziness, staggering gait, confusion, unconsciousness or coma;

**Ingestion>** Moderately toxic, may irritate the mouth, throat and gastro-intestinal tract. Pulmonary aspiration hazard if swallowed and vomiting occurs.

**Chronic:** Headache, Nausea, Tremors, In-coordination., burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Vomiting.

**Medical Conditions Aggravated by Exposure>** Skin contact may aggravate an existing dermatitis. Inhalation may aggravate respiratory diseases e.g. Asthma. Other pre-existing medical conditions aggravated by exposure - disorders of the eye.

#### **ACUTE TOXICITY:**

The effects of overexposure shown in Section II are based on acute toxicity profiles. Typical values are:

Ingredient	Oral LD50 (Rat)	Skin LD50 (Rabbit)	Inhalation LC50
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Cyclohexanol	1400mg/kg	>1000mg/kg	N.D.
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**SKIN CORROSION/IRRITATION: Skin - Rabbit Result: Skin irritation**

**SERIOUS EYE DAMAGE/EYE IRRITATION: Eyes - Rabbit Result: Moderate eye irritation**

**RESPIRATORY OR SKIN SENSITIZATION: No data available.**

**MUTAGENIC EFFECTS: Human leukocyte Cytogenetic analysis Mammal lymphocyte DNA damage**

**CARCINOGEN STATUS:**

**IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.**

**NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.**

**OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.**

**REPRODUCTIVE TOXICITY:**

**Reproductive toxicity - Rat - Subcutaneous Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct. Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands.**

**Reproductive toxicity – Gerbil - Subcutaneous Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct. Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands.**

**Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized System): Inhalation – May cause respiratory irritation.**

**Specific target organ toxicity (STOT-RE) - repeated exposure (Globally Harmonized System): No Data Available.**

**ASPIRATION HAZARD: No data available.**

**11.2 ADDITIONAL DATA:** Prolonged or repeated exposure can cause: Headache, Nausea, Tremors, Incoordination., burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Vomiting.  
**RTECS: GV7875000**

## **12. ECOLOGICAL INFORMATION**

### **DANGEROUS TO AQUATIC LIFE IN HIGH CONCENTRATIONS**

May be dangerous if it enters water intakes.  
Notify local health and pollution control officials.  
Notify operators of nearby water intakes.

#### **12.1 AQUATIC TOXICITY (Acute):**

Toxicity to fish:

LC50 - Pimephales promelas (fathead minnow) - 705 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - > 500 mg/l - 48 h

Toxicity to algae:

EC50 - Desmodesmus subspicatus (green algae) - 29.2 mg/l - 72 h

**12.2 PERSISTANCE AND DEGRADABILITY:** No data available

**12.3 BIOACCUMULATIVE POTENTIAL:** The partition coefficient of n-octanol/water is log Pow: 1.25 @ 25°C (77°F)

**12.4 MOBILITY IN SOIL:** No data available

#### **12.5 RESULTS OF PBT AND vPvB:**

PBT assessment results: This substance is not classified as PBT or vPvB.

**12.6 OTHER ADVERSE EFFECTS:** Harmful to aquatic life with long lasting effects.

## **13. DISPOSAL CONSIDERATIONS**

**13.1 WASTE TREATMENT METHODS:** Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly it is the responsibility of the user to determine the proper storage, transportation, treatment, and or disposal methodologies for spent materials and residues at time of disposition. Dispose in accordance with all applicable disposal regulations. Incinerate under controlled conditions in a permitted facility.  
**CONTAMINATED PACKAGING:** Dispose of as unused product.

The information offered here is for the product as shipped. Use and/or

alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

RCRA: The unused product is a RCRA hazardous waste if discarded. The RCRA ID number is: D001.

If the waste is a spent solvent, the appropriate spent solvent code should be used.

**DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 48 CFR 262**

## 14. TRANSPORT INFORMATION

### Land Transport (DOT)

- 14.1 USDOT ID Number-----> NA1993
- 14.2 USDOT Shipping Name-----> Combustible Liquid, n.o.s.  
(Cyclohexanol)
- 14.3 USDOT Hazard Classification-----> None  
USDOT Label Codes-----> None
- 14.4 USDOT Package Code-----> III
- 14.5 Marine Pollutant-----> No
- 14.6 Special precautions for user-----> No  
Emergency Response Guide-----> 128

### Sea Transport (IMDG)

- 14.1 UN Number:-----> N/A
- 14.2 Proper Shipping Name-----> Not Dangerous Goods
- 14.3 Hazard Class:-----> N/A  
USDOT Label Codes-----> N/A
- 14.4 Packing Group:-----> N/A
- 14.5 Environmental hazard-----> No

### Air Transport (IATA)

- 14.1 UN Number:-----> N/A
- 14.2 Proper Shipping Name:-----> Not Dangerous goods
- 14.3 Hazard Class:-----> N/A  
USDOT Label Codes-----> N/A
- 14.4 Packing Group:-----> N/A
- 14.5 Environmental hazard-----> No

## 15. REGULATORY INFORMATION

### 15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

#### SARA TITLE III (Superfund Amendment and Reauthorization Act)

**SECTION 302 AND 304: Extremely Hazardous Substance List (40 CFR 355) - Not Listed**

**SECTION 313: Toxic Chemicals Listing (40 CFR 372.65) - Listed  
Cyclohexanol CAS-No.108-93-0**

**SECTION 311/312: Hazard Categorization (40 CFR 370) - Acute Health Hazard, Chronic Health Hazard, Fire Hazard.**

**CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)**

**SECTION 102(A) Hazardous Substances (40 CFR 302.4) – Not listed  
Reportable Quantity - None**

**SECTION 101(14) Reportable Quantity: None**

**Massachusetts Right to Know Components  
Cyclohexanol CAS-No.108-93-0**

**Pennsylvania Right to Know Components  
Cyclohexanol CAS-No.108-93-0**

**New Jersey Right to Know Components  
Cyclohexanol CAS-No.108-93-0**

**California Prop. 65 Components  
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.**

**TSCA (Toxic Substance Control Act)  
Cyclohexanol CAS-No.108-93-0 is listed on the TSCA Inventory.**

**International Inventories:**

<b><u>Country or Region</u></b>	<b><u>Inventory Name</u></b>	<b><u>On inventory yes/no</u></b>
<b><u>Australia</u></b>	Australian Inventory of Chemical Substances (AICS)	Yes
<b><u>Canada</u></b>	Domestic Substances List (DSL)	Yes
<b><u>Canada</u></b>	Non-Domestic Substances List (NDSL)	No
<b><u>China</u></b>	Inventory of Existing Chemical Substances in China (IECSC)	Yes
<b><u>Europe</u></b>	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
<b><u>Europe</u></b>	European List of Notified Chemical Substances (ELINCS)	No
<b><u>Japan</u></b>	Inventory of Existing and New Chemical Substances (ENCS)	Yes
<b><u>Japan</u></b>	Industrial Safety & Health Law Inventory (ISHL)	Yes
<b><u>Korea</u></b>	Existing Chemicals List (ECL)	Yes
<b><u>Mexico</u></b>	National Inventory of Chemical Substances (INSQ)	Yes

<b><u>New Zealand</u></b>	New Zealand Inventory	Yes
<b><u>Philippines</u></b>	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
<b><u>Switzerland</u></b>	Inventory of Notified New Substances (CHINV)	Yes
<b><u>Taiwan</u></b>	National Existing Chemical Inventory (NECI)	Yes
<b><u>United States &amp; Puerto Rico</u></b>	Toxic Substances Control Act Inventory	Yes

**15.2 CHEMICAL SAFETY ASSESSMENT: A chemical safety assessment has been carried out for this substance.**

**16. OTHER INFORMATION:**

**Hazard Rating:**

- 4-Extreme**
- 3-High**
- 2-Moderate**
- 1-Slight**
- 0-Insignificant**

**NFPA RATINGS (SCALE 0-4): Health=2 Fire=2 Reactivity=0**  
**HMIS RATINGS (SCALE 0-4): Health=2 Fire=2 Reactivity=0 PPE=**

**Hazard statement(s) from Section 2 and 3:**

- H227 Combustible Liquid**
- H302 Harmful if swallowed.**
- H312 Harmful in contact with skin.**
- H315 Causes skin irritation.**
- H319 Causes serious eye irritation.**
- H332 Harmful if inhaled.**
- H335 May cause respiratory irritation.**
- H402 Harmful to aquatic life.**
- H412 Harmful to aquatic life with long-lasting effects.**

**Date of preparation-----> October 26, 2018**  
**Revision Number-----> 1.1**  
**Revision Content-----> Updated sections: 4, 5, 8, and 11.**  
**Revision Date-----> January 14, 2019**  
**Prepared by-----> T.G. Fenstermaker, Jr.**

**Acronyms:**

- ACGIH - American Conference of Governmental Industrial Hygienists
- AIHA - American Industrial Hygiene Association
- ANSI - American Nation Standards Institute
- API - American Petroleum Institute
- CERCLA - Comprehensive Emergency Response, Compensation, and Liability Act
- DOT - U.S. Department of Transportation
- EC-50 - Effective Concentration
- EPA - U.S. Environmental Protection Agency
  
- HMIS - Hazardous Materials Information System
- IARC - International Agency for Research On Cancer

LD-50	-	Lethal Dose
MAK	-	Germany Maximum Concentration Values
MSHA	-	Mine Safety and Health Administration
NFPA	-	National Fire Protection Association
NIOSH	-	National Institute of Occupational Safety and Health
NOIC	-	Notice of Intended Change (Proposed change to ACGIH TLV)
NTP	-	National Toxicology Program
OPA	-	Oil Pollution Act of 1990
OSHA	-	U.S. Occupational Safety & Health Administration
PEL	-	Permissible Exposure Limit (OSHA)
RCRA	-	Resource Conservation and Recovery Act
REL	-	Recommended Exposure Limit (NIOSH)
SARA	-	Superfund Amendments and Reauthorization Act of 1986 Title III
SCBA	-	Self-Contained Breathing Apparatus
STEL	-	Short-Term Exposure Limit (generally 15 minutes)
TLV	-	Threshold Limit Value
TSCA	-	Toxic Substances Control Act
TWA	-	Time Weighted Average (8hr.)
WHMIS	-	Canadian Workplace Hazardous Materials Information System

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