

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

1. PRODUCT IDENTIFIER

1.1 PRODUCT NAME:-----> **CYCLOHEXANE**

PRODUCT NUMBER(S):-----> 130400, 130401, 130410, 130450

TRADE NAMES/SYNONYMS: ----> Cyclohexane

CAS-No: 110-82-7

Chemical Family: Cyclic Aliphatic Hydrocarbon

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

RECOMMENDED USE: Industrial: Polymer processing, Use as a blowing agent, Use as a fuel, Intermediate, Manufacture and solvent use, Use in coatings, Cleaning agent, Distribution, 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 2), H225

Skin irritation (Category 2), H315

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

Aspiration hazard (Category 1), H304

Acute aquatic toxicity (Category 1), H400

2.2 GHS Label elements, including precautionary statements



Pictogram

GHS02

GHS08

GHS07

GHS09

Signal word: **DANGER**

Hazard statement(s)

H225 Highly flammable liquid and vapor.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.

H400 Very toxic to aquatic life.

Precautionary statement(s)

Prevention:

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

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

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.

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

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.

P331 Do NOT induce vomiting.

P332 + P313 If skin irritation occurs: 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.

P391 Collect spillage.

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 - none

3. INGREDIENTS

3.1 SUBSTANCE:

Ingredient	CAS No.	% by WT. Range	CLASSIFICATION
Cyclohexane	110- 82-7 EC-No.203-806-2 Index No.601-017-00-1 Reg.No.01-2119463273-41-XXXX	99.9	Flammable liquids (Category 3), H225 Skin irritation (Category 2), H315 STOT_SE (Category 3) Central Nervous System, H336 Aspiration hazard (Category 1), H304 Acute aquatic toxicity (Category 1), H400

3.2 MIXTURE: Not applicable.

4. FIRST-AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

INHALATION: CYCLOHEXANE:

****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: CYCLOHEXANE:

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

minutes). Get medical attention immediately.

EYE CONTACT: CYCLOHEXANE:

****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: CYCLOHEXANE:

****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: Typical symptoms are cardiovascular disorders, sweetish taste in the mouth, nausea, vomiting, loss of appetite, strong thirst, burning of eyes and bleeding from the nose. Based on animal studies damage may occur to the kidney or liver.

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, liver, kidney & nervous system conditions (toxicosis, miscarriage) and infertility.

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: -17.99°C (-0.38°F) - TCC LEL %: 1.0 (V)

Auto-ignition Temp: 260.0°C (500.0°F) UEL %: 9.0 (V)

UNIFORM FIRE CODE: Flammable Liquid Class IB

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: Flammable 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: Extremely Flammable 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 approved positive pressure self contained respiratory 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.

REPORTABLE QUANTITY (RQ): 1000lbs.

The Superfund Amendments and Reauthorization Act (SARA) Section 304 requires that a release equal to or greater than the reportable quantity for this substance be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40). If the release of this substance is reportable under CERCLA Section 103, the national response center must be notified immediately at (800) 424-8882 or (202) 426-2675 in the metropolitan Washington, D. C. area (40 CFR 302.6).

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.

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.203-806-2 Index No.601-017-00-1 Reg.No.01-2119463273-41-XXXX	99.9	100ppm TWA (ACGIH) 300ppm TWA (NIOSH) 300ppm 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: 35 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:

Cyclohexane 110-82-7

APPEARANCE:

Clear liquid

COLOR:

Colorless

ODOR:

Hydrocarbon odor

ODOR THRESHOLD:

No Data Available

pH:

No Data Available

MOLECULAR WEIGHT:

84.16 amu

MELTING POINT:

4 - 7°C (39 - 45°F)

BOILING POINT:

80.7°C (177.3°F)

SPECIFIC GRAVITY:

0.779@25°C

VAPOR PRESSURE:

77 mm Hg @ 20°C (68.0°F)

168.8mmHg@ 37.7°C (99.9°F)

VAPOR DENSITY:

No data available

WATER SOLUBILITY:

No data available

**PARTITION COEFFICIENT N-
OCTANOL/WATER**

log Pow: 3.44

FLASH POINT:

-17.99°C (-0.38°F) - closed cup

EVAPORATION RATE (BUTYL ACETATE=1):

No data available

UPPER FLAMMABILITY LIMIT:

9.0% (V)

LOWER FLAMMABILITY LIMIT:

1.0% (V)

AUTO IGNITION TEMPERATURE:

260.0°C (500.0°F)

DECOMPOSITION TEMPERATURE:

No Data Available

VISCOSITY:

No Data Available

EXPLOSIVE PROPERTIES:

No Data Available

OXIDIZING PROPERTIES:

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)

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: Typical symptoms are cardiovascular disorders, sweetish taste in the mouth, nausea, vomiting, loss of appetite, strong thirst, burning of eyes and bleeding from the nose. Based on animal studies damage may occur to the kidney or liver.

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, liver, kidney & nervous system conditions (toxicosis, miscarriage) and infertility.

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	
Cyclohexane	12705mg/kg	>2000mg/kg	34000mg/L/4hr	

SKIN CORROSION/IRRITATION: Skin - Rabbit Result: No skin irritation

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

RESPIRATORY OR SKIN SENSITIZATION: No data available.

MUTAGENIC EFFECTS: No data available

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: No data available

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized System): No Data Available;

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

ASPIRATION HAZARD: May be fatal if swallowed and enters airways.

11.2 ADDITIONAL DATA: Central nervous system depression, Drowsiness, Irritability, Dizziness, Gastrointestinal disturbance, Lung irritation, chest pain, pulmonary edema
RTECS: GU6300000

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) - 4.53 mg/l - 96 h
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - 0.9 mg/l - 48 h
(OECD Test Guideline 202)

Toxicity to algae:

EC50 - Pseudokirchneriella subcapitata (green algae) - 3.4 mg/l - 72 h
(OECD Test Guideline 201)

12.2 PERSISTENCE AND DEGRADABILITY: Readily biodegradable.

12.3 BIOACCUMULATIVE POTENTIAL: The partition coefficient of n-octanol/water is log Pow 3.44

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: Very toxic to aquatic life.

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 numbers are: U056 and 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-----> UN1145
- 14.2 USDOT Shipping Name-----> Cyclohexane
- 14.3 USDOT Hazard Classification-----> 3 (Flammable Liquid)
USDOT Label Codes-----> 3
- 14.4 USDOT Package Code-----> II
- 14.5 Marine Pollutant-----> Yes
- 14.6 Special precautions for user-----> Yes
Emergency Response Guide-----> 127
Reportable quantity-----> 1000lbs.

Sea Transport (IMDG)

- 14.1 ID Number-----> UN1145
- 14.2 Proper shipping name-----> CYCLOHEXANE
- 14.3 Hazard Classification-----> 3 (Flammable Liquid)
Label Codes-----> 3
- 14.4 Package Code-----> II
- 14.5 Marine Pollutant-----> Yes
- 14.6 Special precautions for user-----> Yes
EMS-Number-----> F-E, S-D

Air Transport (IATA)

- 14.1 ID Number-----> UN1145
14.2 Proper shipping name-----> Cyclohexane
14.3 Hazard Classification-----> 3 (Flammable Liquid)
Label Codes-----> 3
14.4 Package Code-----> II
14.5 Environmental hazard-----> None
14.6 Special precautions for user-----> Yes

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
Cyclohexane CAS-No.110-82-7**

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

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

**SECTION 102(A) Hazardous Substances (40 CFR 302.4) - Listed
Reportable Quantity - Cyclohexane CAS-No.110-82-7 1,000 pounds.**

SECTION 101(14) Reportable Quantity: 1,000 lbs

**Massachusetts Right to Know Components
Cyclohexane CAS-No.110-82-7**

**Pennsylvania Right to Know Components
Cyclohexane CAS-No.110-82-7**

**New Jersey Right to Know Components
Cyclohexane CAS-No.110-82-7**

**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)

Cyclohexane CAS-No.110-82-7 is listed on the TSCA Inventory.

International Inventories:

Country or Region	Inventory Name	On inventory yes/no
<u>Australia</u>	Australian Inventory of Chemical Substances (AICS)	Yes
<u>Canada</u>	Domestic Substances List (DSL)	Yes
<u>Canada</u>	Non-Domestic Substances List (NDSL)	No
<u>China</u>	Inventory of Existing Chemical Substances in China (IECSC)	Yes
<u>Europe</u>	European Inventory of Existing Commercial Chemicals Substances (EINECS)	Yes
<u>Europe</u>	European List of Notified Chemical Substances (ELINCS)	No
<u>Japan</u>	Inventory of Existing and New Chemical Substances (ENCS)	Yes
<u>Japan</u>	Industrial Safety & Health Law Inventory (ISHL)	Yes
<u>Korea</u>	Existing Chemicals List (ECL)	Yes
<u>Mexico</u>	National Inventory of Chemical Substances (INSQ)	Yes
<u>New Zealand</u>	New Zealand Inventory	Yes
<u>Philippines</u>	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
<u>Switzerland</u>	Inventory of Notified New Substances (CHINV)	Yes
<u>Taiwan</u>	National Existing Chemical Inventory (NECI)	Yes
<u>United States & Puerto Rico</u>	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=3 Reactivity=0
HMIS RATINGS (SCALE 0-4): Health=2 Fire=3 Reactivity=0 PPE=

Hazard statement(s) from Section 2 and 3:

- H225 Highly flammable liquid and vapor.**
- H304 May be fatal if swallowed and enters airways.**
- H315 Causes skin irritation.**
- H336 May cause drowsiness or dizziness.**
- H400 Very toxic to aquatic life.**

Date of preparation-----> May 14, 2015

Revision Number-----> 1.2

Revision Content-----> Updated sections: 1, 4, 5, 8, and 10

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

This information is furnished without warranty, representation, inducement of license of any kind, except that it is accurate to the best of G.J. Chemical's knowledge, or obtained from sources believed by G.J. Chemical Co., Inc. to be accurate, and G.J. Chemical Co., Inc. does not assume any legal responsibility for use or reliance upon same. Users are encouraged to conduct their own tests. Before using any product, read its label. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.