

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

1. PRODUCT IDENTIFIER

1.1 PRODUCT NAME -----> **n-Methyl-2-Pyrrolidone**

PRODUCT NUMBER(S)-----> 209400 -Technical grade
209405 – High Purity
209410 - ACS Grade
209500 - Reclaim

TRADE NAMES AND SYNONYMS -----> n-Methyl-2- Pyrrolidone, NMP, M-Pyrol

CAS-No: 872-50-4

CHEMICAL FAMILY: Cyclic Ketone

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

RECOMMENDED USE: Industrial: Solvent, Coatings, Cleaning Agents, Functional Fluids, Use in Laboratories, Agro-chemical uses, Use in Road and construction applications.

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

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Reproductive toxicity (Category 1B), H360

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

H335

2.2 GHS Label elements, including precautionary statements



Pictogram

GHS08

GHS07

Signal word: **DANGER**

Hazard statement(s)

H227 Combustible liquid.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H360 May damage fertility or the unborn child.

Precautionary statement(s)

Prevention:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

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.

P280 Wear protective gloves/ eye protection/ face protection.

P281 Use personal protective equipment as required.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

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.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

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 - none

3. INGREDIENTS

3.1 SUBSTANCE:

Ingredient	CAS No.	% by WT. Range	CLASSIFICATION
n-Methyl-2-Pyrrolidone	872-50-4	>99	Flammable liquids (Category 4), H227
	EC-No.212-828-1		Skin irritation (Category 2), H315
	Index-No.606-021-00-7		Eye irritation (Category 2A), H319
	Reg. No.01-2119472430-46-XXXX		Reproductive toxicity (Category 1B), H360
			STOT-SE (Category 3), Respiratory System, H335

3.2 MIXTURE: Not applicable.

4. FIRST-AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

INHALATION: n-Methyl-2-Pyrrolidone

****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: n-Methyl-2-Pyrrolidone

****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 if irritation persists.**

EYE CONTACT: n-Methyl-2-Pyrrolidone

****FIRST AID- Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15-20 minutes). Remove contact lenses, if worn, after initial flush. Consult a physician if irritation persists.**

INGESTION: n-Methyl-2-Pyrrolidone

****FIRST AID- Do not induce vomiting. Never give anything by mouth to an unconscious person. Give lukewarm water if victim is conscious and alert. Consult a physician or poison control center, treat symptomatically.**

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

Eye: Moderate to severe irritant. Excess redness of the conjunctiva may occur.

Skin: Mildly irritating; Skin adsorption hazard.

Inhalation: Due to its low vapor pressure the inhalation potential is regarded as low. However if this product is heated, misted or sprayed, it may be irritating to the mucous membranes and upper respiratory tract.

Ingestion: May cause discomfort and irritation of the gastrointestinal tract, Dizziness and shortness of breath.

Chronic: See component summary.

Medical Conditions Aggravated by Exposure: This material or its emissions may de-fat skin, cause contact dermatitis or otherwise aggravate existing skin disease.

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: 91°C (196°F) TCC LEL %:1.3 (V)

Auto-ignition Temp.: 270°C (518°F) UEL %:9.5 (V)

UNIFORM FIRE CODE: Combustible Liquid Class IIIA

5.1 SUITABLE EXTINGUISHING MEDIA: x CO2--> x Dry Chemical--> x

Water-fog-->x Other--> Aqueous film forming foam for large fires.

Unsuitable extinguishing media: Do not use waterjet.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR

MIXTURE: Combustible liquid; Keep containers tightly closed. isolate from all sources of ignition. Closed containers may explode when exposed to extreme heat. Use water spray, water fog, or regular foam. Do not use straight streams.

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: When heated above the flash point, releases flammable vapors. When mixed with air and exposed to ignition source, vapors can burn or explode if confined. Vapors may travel long distances along ground before igniting and flashing back to vapor source. 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.

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. Immediately evacuate all nonessential people. Verify that responders are properly trained and wearing appropriate 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.

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 evaporates and forms vapor (fumes), which can catch fire. 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. Vapors can accumulate in low areas. Avoid contact with eyes, skin and clothing. Do not take internally. 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. Keep containers tight and upright to prevent leakage. Do not contact with oxidizing materials. Keep containers closed when not in use. Store under inert gas. Moisture sensitive. Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

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
n-Methyl-2-Pyrrolidone	872-50-4 EC-No.212-828-1 Index-No.606-021-00-7 Reg. No.01-2119472430-46-XXXX	>99	10ppm TWA(WEEL) 75ppm TWA (UK) 25ppm STEL (UK)

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
 UK = United Kingdom

8.2 **EXPOSURE CONTROLS**

EXPOSURE GUIDELINES: Consider the potential hazards of this material (Section 3), 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 TWA. For exposures greater than 10 times TWA or for unknown vapor concentrations use a NIOSH/MSHA approved self-contained positive pressure breathing apparatus (SCBA) with full face-piece.

BODY CLOTHING:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged contact with this substance. Use chemical resistant apron or other impervious clothing. Remove and wash contaminated clothing before reuse.

SKIN PROTECTION:

Employee must wear appropriate protective gloves to prevent contact with this substance.

Full contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Splash contact

Material: Nature latex/chloroprene

Minimum layer thickness: 0.6 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. Emergency 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:

1-Methyl-2-Pyrrolidone 872-50-4

APPEARANCE:	Clear liquid
COLOR:	Colorless
ODOR:	Amine-like odor.
ODOR THRESHOLD:	No Data Available
pH:	7.7 - 8
MOLECULAR WEIGHT:	99.13 amu
MELTING POINT:	-24°C (-11°F)
BOILING POINT:	202°C (396°F)
SPECIFIC GRAVITY:	1.028@25°C (77°F)
DENSITY (25°C):	1.028 g/ml @25°C (77°F)
VAPOR PRESSURE:	0.29-0.32 mm Hg @ 20°C (68°F)
VAPOR DENSITY:	3.42

WATER SOLUBILITY:	No data available
PARTITION COEFFICIENT N-OCTANOL/WATER	log Pow:-0.46
FLASH POINT:	91°C (196°F) - closed cup
EVAPORATION RATE (BUTYL ACETATE=1):	0.03
UPPER FLAMMABILITY LIMIT:	9.5% (V)
LOWER FLAMMABILITY LIMIT:	1.3% (V)
AUTO IGNITION TEMPERATURE:	270°C (518°F)
DECOMPOSITION TEMPERATURE:	No data available
VISCOSITY:	No data available
EXPLOSIVE PROPERTIES:	No data available
OXIDIZING PROPERTIES:	No data available

9.2 OTHER INFORMATION:

Surface tension: 40.7 mN/m

10. STABILITY AND REACTIVITY INFORMATION

10.1 REACTIVITY: No data available.

10.2 CHEMICAL STABILITY: Unstable () Stable (X)

10.3 POSSIBILITY OF HAZARDOUS REACTIONS: No data available

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

10.4 CONDITIONS TO AVOID: Heat, Sparks, Pilot Lights, Static Electricity, and Open Flame. Extremes of temperature and direct sunlight.

10.5 INCOMPATIBLE MATERIALS: Strong oxidants such as liquid chlorine, oxygen, sodium hypochlorite, inorganic acids e.g. nitric acid, perchloric acid; also hydrogen peroxide. This product reacts violently with oxidizing agents.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition products may include: Fumes, Smoke, Carbon Oxides, Nitrogen oxides, 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 Eye--> x Inhalation--> x

ACUTE HEALTH EFFECTS:

Effects of overexposure:

Eye> Moderate to severe irritant. Excess redness of the conjunctiva may occur.

Skin> Mildly irritating; Skin adsorption hazard.

Inhalation> Due to its low vapor pressure the inhalation potential is regarded as low. However if this product is heated, misted or sprayed, it may be irritating to the mucous membranes and upper respiratory tract.

Ingestion> May cause discomfort and irritation of the gastrointestinal tract, Dizziness and shortness of breath.

Chronic: See component summary.

Medical Conditions Aggravated by Exposure> This material or its emissions may de-fat skin, cause contact dermatitis or otherwise aggravate existing skin disease.

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(Rat)	 Inhalation LC50
n-Methyl-2-Pyrrolidone	3914mg/kg	8000mg/kg	5100ppm/L/4hr

SKIN CORROSION/IRRITATION: Eyes - Rabbit Result: Eye irritation

SERIOUS EYE DAMAGE/EYE IRRITATION: No data available.

RESPIRATORY OR SKIN SENSITIZATION: No data available.

MUTAGENIC EFFECTS: No information 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.

No increase in tumors in rats exposed by inhalation or via feed for 2 years. A dietary study found increased liver tumors in male and female mice given 1100 and 1400mg/kg body wt/day for 18 months, respectively. The relevance of these findings to humans appears doubtful.

REPRODUCTIVE TOXICITY: NMP produced adverse effects to reproduction in the rat after ingestion, although fertility was unaltered. These effects occurred at exposures which also caused mild generalized effects in the parental animals. The relevance of these findings to humans is unknown. Damage to fetus possible

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 INFORMATION: Prolonged or repeated exposure can cause:, Vomiting, Diarrhea, Abdominal pain, Rats exposed to 1-methyl-2- pyrrolidione at a concentration of 1 mg/L as an aerosol for 10 days showed depletion of hematopoietic cells in the bone marrow and atrophy of the lymphoid tissues of the thymus, spleen, and lymph nodes.

12. ECOLOGICAL INFORMATION

12.1 AQUATIC TOXICITY:

Toxicity to Fish:

LC50 - Leuciscus idus (Golden orfe) - > 500 mg/l – 96 h

Toxicity to daphnia and other aquatic invertebrates:

EC50 - Daphnia magna (Water flea) - > 1,000 mg/l - 24 h

Toxicity to bacteria:

LC50 - Bacteria - > 9,000 mg/l

12.2 PERSISTANCE AND DEGRADABILITY: Result: 90 % - Readily biodegradable.

12.3 BIOACCUMULATIVE POTENTIAL: log Pow: -0.46; This material is not expected to bio-accumulate.

Bio-concentration Factor (BCF): 0.16.

Biological Oxygen Demand(BOD): BOD=73% (28days)

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: No data available.

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. . Recommended methods are incineration or biological treatment at a permitted disposal 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.

14. TRANSPORT INFORMATION

Not regulated by US Department of Transportation (USDOT) when shipped in packages of 119gallons or less.

Land Transport (DOT)

14.1 USDOT ID Number-----> NA1993

14.2 USDOT Shipping Name-----> Combustible Liquid, n.o.s.
(n-Methyl-2- pyrrolidone)

14.3 USDOT Hazard Classification-----> N/A

USDOT Label Codes-----> N/A

14.4 USDOT Package Code-----> III

14.5 Environmental hazard-----> No

14.6 Special precautions for user-----> None

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

N-methyl-2-pyrrolidone CAS-No.872-50-4

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

N-methyl-2-pyrrolidone CAS-No.872-50-4

Pennsylvania Right to Know Components

N-methyl-2-pyrrolidone CAS-No.872-50-4

New Jersey Right to Know Components

N-methyl-2-pyrrolidone CAS-No.872-50-4

California Prop. 65 Components

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. N-methyl-2-pyrrolidone CAS-No.872-50-4

TSCA (Toxic Substance Control Act)

N-methyl-2-pyrrolidone CAS-No.872-50-4 is listed on the TSCA inventory.

International Inventories:

<u>Country or Region</u>	<u>Inventory Name</u>	<u>On inventory yes/no</u>
<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 Chemical 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:

HMIS (Hazardous Materials Identification System)

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=J

Hazard statement(s) from Section 2 and 3:

H227 Combustible liquid.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H360 May damage fertility or the unborn child.

Date of preparation-----> October 2, 2013

Revision Number-----> 1.4

Revision Content-----> General update all sections

Revision Date-----> October 22, 2018

Prepared by-----> T. G. Fenstermaker, Jr.

Acronyms:

ACGIH	-	American Conference of Governmental Industrial Hygenists
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.