



**CLEAR PRIMER - NSF**

**SECTION 5 FIRE FIGHTING MEASURES**

Flashpoint / Method: 0 - 5 Degrees F. / PMCC  
Flammability: LEL = 1.8 % Volume, UEL = 11.5 % Volume  
Extinguishing: Use dry chemical, CO<sub>2</sub>, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.  
Media:  
Special Fire Fighting Procedure: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored  
Unusual Fire and Explosion Hazards: Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.  
Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

Spill or Leak Procedures: Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 12 for disposal information.

**SECTION 7 HANDLING AND STORAGE**

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.  
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.  
Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

**SECTION 8 ECOLOGICAL INFORMATION**

This product is not expected to be toxic to aquatic organisms.  
Cyclohexanone: 96 hour LC<sub>50</sub> values for fish is over 100 mg/l.  
Tetrahydrofuran: 96 hour LC<sub>50</sub> fathead minnow: 2160 mg/L.  
Methyl Ethyl Ketone: 96 hour LC<sub>50</sub> for fish is greater than 100 mg/L.  
Acetone: 96 hour LC<sub>50</sub> for fish is greater than 100 mg/L.  
VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.  
VOC Level: 600 g/l per SCAQMD Test Method 316A.

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**SECTION 9                    EXPOSURE CONTROLS/PERSONAL PROTECTION**

Ventilation:    Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

Respiratory Protection:    For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Skin Protection:            Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

Eye Protection:            Safety glasses with side shields or safety goggles.

Other:                      Eye wash and safety shower should be available.

**SECTION 10                    PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point:              174 Degrees F        /    79 C

Melting Point:              N/A

Vapor Pressure:             70 mmHg @ 20 Degrees C

Vapor Density:              (Air = 1) 2.5

Volatile Components:      100%

Solubility In Water:        28 parts

pH:                          N/A

Specific Gravity:            0.84 +/- 0.02

Evaporation Rate:          (BUAC = 1) = 5.5 - 8.0

Appearance:                Clear Liquid

Odor:                        Ether-Like

Will Dissolve In:          Water, organic solvents

Material Is:                 Liquid

**SECTION 11                    STABILITY AND REACTIVITY**

Stability:                    Stable.

Conditions To Avoid:      Avoid heat, sparks, flames and other sources of ignition.

Hazardous Decomposition Products:    Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Incompatibility/ Materials To Avoid:    Oxidizing agents, alkalies, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

Hazardous Polymerization:    Will not occur.

**SECTION 12                    DISPOSAL INFORMATION**

Waste Disposal:            Dispose in accordance with current local, state and federal regulations.

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**SECTION 13**

**TOXICOLOGICAL INFORMATION**

Inhalation: Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Skin: May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

Eye: Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

Chronic Toxicity: Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.

Toxicity Data: Acetone: Oral rat LD50: 5,800 mg/kg  
Inhalation rat LC50: 50,100 mg/m<sup>3</sup>/8 hours

Cyclohexanone: Oral rat LD50: 1,620 mg/kg  
Inhalation rat LC50: 8,000 ppm/4 hours  
Skin rabbit LD50: 1 mL/kg

Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg  
Inhalation rat LC50: 21,000 ppm/3 hours

Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg  
Inhalation rat LC50: 23,500 mg/m<sup>3</sup>/8 hours  
Skin rabbit LD50: 6,480 mg/kg

Sensitization: None of the components are known to cause sensitization.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to Tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health are unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) as "A3," Confirmed Animal Carcinogen with Unknown Relevance to Humans. incidences of tumors in humans have not been reported for THF.

Mutagenicity: Acetone has been positive in a mammal cell cytogenic analysis but negative in many other assays. At most, acetone is weakly genotoxic. Cyclohexanone has been positive in bacterial and mammalian assays. Tetrahydrofuran was positive in a bacterial assay. Methyl ethyl ketone is not considered genotoxic based on laboratory studies.

Reproductive Toxicity: Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran have been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

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**SECTION 14            TRANSPORTATION INFORMATION**

DOT	<u>Less than 1 Liter (0.3 gal)</u>	<u>Greater than 1 Liter (0.3 gal)</u>
Proper Shipping Name:	Consumer Commodity	Flammable Liquid NOS
Hazard Class/Packing Group:	ORM-D	3, PGII
UN/NA Number:	None	UN1993
Hazard Labels:	None	Flammable Liquid (Methyl Ethyl Ketone, Cyclohexanone)

IMDG

Proper Shipping Name:	Flammable Liquid, N.O.S. Limited Quantity
Hazard Class/Packing Group:	3, II
UN Number:	UN1993
Label:	None (Limited Quantities are excepted from labeling)

RCRA Hazardous Waste Number: U002, U057, U159, U213  
EPA Hazardous Waste ID Number: D001, D035, F003, F005  
EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)  
2000 North American Emergency Response Guidebook Number: 127 or 128

**SECTION 15**

**REGULATIONS**

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

<u>Chemical</u>	<u>CAS #</u>	<u>%</u>
Methyl Ethyl Ketone	78-93-3	70-80%

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Methyl Ethyl Ketone (80% maximum) of 5,000 lbs, is 6,250 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product does not contain any chemicals subject To California Proposition 65 regulation.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

**SECTION 16            DISCLAIMER**

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.