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MATERIAL SAFETY DATA SHEET

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SECTION I: PRODUCT INFORMATION

Product Name: **Cyclo-147F Navy Solvent and Cleaner**
Chemical Class: Cyclic Siloxane

Provided by: **Clearco Products Co. Inc.,**
Telephone # for Information: 215 639-2640

Data Prepared: 03/01/2011
Last Revised: April 2010,
Date Revised: October 2010

SECTION II: HAZARDOUS COMPONENTS

<u>Component Name</u>	<u>CAS Number</u>	<u>Percent Weight (%)</u>
Decamethylcyclopentasiloxane	541-02-6	75 – 90%
Octamethylcyclotetrasiloxane	556-67-2	10 – 25%

The above components are hazardous as defined in 29 CFR 1910.1200.

NFPA Profile: Health 1, Flammability 2, Reactivity 0, Instability 0

SECTION III: EFFECTS OF OVEREXPOSURE

Acute Effects

EYE CONTACT: Direct contact may cause temporary redness and discomfort.
SKIN CONTACT: No significant effects expected from a single short-term exposure.
INHALATION: No significant effects expected from a single short-term exposure.
INGESTION: Low ingestion hazard in normal use.

Prolonged/Repeated Exposure Effects

NOT listed as a carcinogen or suspected carcinogen by NTP, IARC or OSHA.
SKIN CONTACT: No adverse effects are expected under normal conditions.
INHALATION: No known applicable information.
INGESTION: Not an anticipated route of exposure..

SECTION III: EFFECTS OF OVEREXPOSURE CONT.

Signs and Symptoms of Overexposure
No known applicable information.

Medical Conditions Aggravated by Exposure
No known applicable information.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to SECTION XI for the detailed toxicology information.

SECTION IV: FIRST AID MEASURES

EYE CONTACT: Immediately flush with water for 15 minutes and get medical attention if irritation persists.
SKIN CONTACT: No first aid should be needed.
INHALATION: Move person to fresh air.
INGESTION: Do not induce vomiting. Never give anything by mouth to an unconscious person. Slowly dilute with 2 glasses of water.
COMMENTS: Treat according to person's condition and specifics of exposure.

SECTION V: FIRE FIGHTING MEASURES

FLASH POINT: 147°F / > 63.88°C METHOD: Closed cup

BOILING POINT: > 356°F / > 180°C

AUTOIGNITION TEMPERATURE: Not determined

FLAMMABILITY LIMITS IN AIR: Not determined

EXTINGUISHING MEDIA:

On large fires, use dry chemical, foam, or water spray. On small fires, use carbon dioxide (CO₂), dry chemical, or water spray. Water can be used to cool fire exposed containers.

FIRE FIGHTING MEASURES:

Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

UNUSUAL FIRE HAZARDS: None.

Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicon Dioxides. Formaldehyde.

SECTION VI: ACCIDENTAL RELEASE MEASURES

CONTAINMENT/ CLEAN UP:

Disposal of collected product, residues, and clean-up materials may be governmentally regulated. Observe all applicable local, state, and federal waste management regulations. Mop-up or wipe-up, or soak-up with absorbent and contain for salvage or disposal. For large spills, provide diking or other appropriate containment to keep material from spreading. Clean any remaining slippery surfaces by appropriate techniques, such as: several mopping or swabbing with appropriate solvents; washing with mild, caustic detergents or solution; or high pressure steam for large areas. For non-silicones use typical industrial cleaning materials. Observe any safety precautions applicable to the cleaning material being used. Observe all personal protection equipment recommendations described in this document. Local, state, and federal reporting requirements may apply to spills or releases of this material into the environment.

NOTE: See section VIII for Personal Protective Equipment for Spills. Call Chemsil Silicones, Inc., (818) 700-0302, if additional information is required.

SECTION VII: HANDLING AND STORAGE

Use with adequate ventilation. Avoid eye contact.

Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge. Keep container closed and away from heat, sparks, and flame.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

<u>Component Name</u>	<u>CAS Number</u>	<u>Exposure Limits</u>
Decamethylcyclopentasiloxane	541-02-6	See section XI comments
Octamethylcyclotetrasiloxane	556-67-2	See section XI comments

Engineering Controls

Local Ventilation: None should be needed.
General Ventilation: Recommended.

Personal Protective Equipment for Routine Handling

EYE CONTACT: Use proper protection – safety glasses as a minimum.
SKIN CONTACT: Washing at mealtime and end of shift is adequate.
SUITABLE GLOVES: No special protection needed.

INHALATION: No respiratory protection needed.
SUITABLE RESPIRATOR: None should be needed.

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION CONT.

Personal Protective Equipment for Spills

EYE CONTACT: Use proper protection – safety glasses as a minimum.
SKIN CONTACT: Washing at mealtime and end of shift is adequate.
SUITABLE GLOVES: No special protection needed.

INHALATION /
SUITABLE RESPIRATOR: No respiratory protection needed.
PRECAUTIONARY MEASURES: Avoid eye contact. Use reasonable care.

NOTE: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions. For further information regarding aerosol inhalation toxicity, please refer to the guidance document regarding the use of silicone-based materials in aerosol applications that has been developed by the silicone industry (www.SEHSC.com) or contact the Chemsil Silicones service group.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

Physical form:	Liquid
Color:	Colorless
Odor:	Slight odor
Specific Gravity @ 25°C:	0.954
Viscosity:	TBD cSt
Flash Point:	147°F / > 63.88° (METHOD: Closed cup)
Freezing/Melting Point:	<0°F/-17°C
Boiling Point:	>356°F/>180°C
Vapor Pressure @ 25°C:	<1mmHg@25°C
Vapor Density:	>1
Solubility in Water:	Not Soluble
pH:	Not Applicable

NOTE: The above information is not intended for use in preparing product specifications. Contact Chemsil Silicones, Inc. before writing specifications.

SECTION X: STABILITY AND REACTIVITY

Chemical Stability:	Stable.
Hazardous Polymerization:	Hazardous polymerization will not occur.
Conditions to Avoid:	None.
Materials to Avoid:	Oxidizing material can cause a reaction.

SECTION XI:**TOXICOLOGICAL INFORMATION**Component Toxicology Information

Repeated inhalation or oral exposure of mice and rats to decamethylcyclpentasiloxane produced an increase in liver size. No gross histopathological or significant clinical chemistry effects were observed. An increase in liver metabolizing enzymes, as well as a transient increase in the number of normal cells (hyperplasia) followed by an increase in cell size (hypertrophy) were determined to be the underlying causes of the liver enlargement. The biochemical mechanisms producing these effects are highly sensitive in rodents, while similar mechanisms in humans are insensitive. Good industrial hygiene practice minimizes inhalation exposure to any chemical. This material has a set exposure guideline of 10 ppm TWA.

A 2 year combined chronic/carcinogenicity assay was conducted on decamethylcyclpentasiloxane (D5). Fischer-344 rats were exposed by whole-body vapor inhalation 6hr/day, 5 days/week for up to 24 months to 0, 10, 40, or 160 ppm of D5. A statistically significant increase in the trend for uterine endometrial tumors was observed in female rats exposed for 24 months at 160 ppm. Whether or not this increase in incidence is truly related to the exposure to decamethylcyclpentasiloxane is questionable and yet to be determined. The 160 ppm exposure concentration greatly exceeds workplace or consumer exposure. It is unlikely that industrial, commercial or consumer uses of products containing D5 would result in a significant risk to humans. The exposure guideline will be reevaluated when a better understanding of the significance of this new data is developed.

Special Hazard Information on Components

No known applicable information.

SECTION XII:**ECOLOGICAL INFORMATION**Environmental Fate and Distribution

- Air:** This product is a small low molecular weight volatile compound, it will therefore readily partition into the atmosphere. It is, however, not a hydrocarbon solvent.
- Water:** This product has a very low water solubility (<100 ppb). As it has a specific gravity of < 1, if discharged to water, it will initially form a surface film. However, as it is very volatile, the product will rapidly evaporate into the air. The aquatic half life is estimated at between 1-5 days.
- Soil:** As a result of rapid partitioning into the atmosphere, this product is unlikely to be found in sediment or as a component of sewage sludge.
- Degradation:** This product is volatile and is degraded rapidly in the atmosphere with a half life of <30 days. Due to the very low water solubility of this product, standard OECD protocols for ready and inherent biodegradability are not suitable for measuring the biodegradability of this product.

SECTION XII:**ECOLOGICAL INFORMATION****CONT.**Environmental Effects**Toxicity to Water Organisms:**

Based on analogy to similar materials this product is expected to exhibit low toxicity to aquatic organisms. This product is volatile and has a very short half life in the aquatic environment and therefore does not present a risk to aquatic organisms.

Toxicity to Soil Organisms:

Due to its volatility, this product is unlikely to be found in the terrestrial compartment.

Bioaccumulation: This product is a low molecular weight lipophilic molecule which has the potential for bioconcentration.

Fate and Effects in Waste Water Treatment Plants

Complete information is not yet available.

SECTION XIII: DISPOSAL CONSIDERATIONS

RCRA Hazard Class (40 CFR 261)

When a decision is made to discard this material, as received, is it classified as a hazardous waste?

No.

State or local laws may impose additional regulatory requirements regarding disposal.

SECTION XIV: TRANSPORT INFORMATION

DOT Road Shipment Information (49 CFR 172.101)

Proper Shipping Name: COMBUSTIBLE LIQUID, N.O.S.
Hazard Technical Name: CYCLOSILOXANE
Hazard Class: COMBUSTIBLE LIQUID
UN/NA Number: NA1993
Packing Group: III
Remarks: Above applies only to containers over 119 gallons or 450 liters.

SECTION XIV: TRANSPORT INFORMATION

Ocean Shipment (IMDG) Not subject to INDG code.
Air Shipment (IATA) Not subject to IATA regulations.

SECTION XV: REGULATORY INFORMATION

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

EPA SARA Title III Chemical Listings

Section 302 Extremely Hazardous Substances: None
Section 304 CERCLA Hazardous Substances: None
Section 312 Hazard Class:
Acute: No
Chronic: No
Fire: Yes
Pressure: No
Reactive: No

Section 313 Toxic Chemicals: None present in regulated quantities.

Supplemental State Compliance Information
CALIFORNIA

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects, or other reproductive harm.

None known.

SECTION XV:**REGULATORY INFORMATION****CONT.**

MASSACHUSETTS

No ingredient regulated by MA Right-to-Know Law present.

NEW JERSEY

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
541-02-6	> 60.0	Decamethylcyclopentasiloxane
70131-67-8	15.0-40.0	Dimethyl siloxane, hydroxyl-terminated
None	1.0-5.0	Dimethylcyclosiloxanes

PENNSYLVANIA

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
541-02-6	> 60.0	Decamethylcyclopentasiloxane
70131-67-8	15.0-40.0	Dimethyl siloxane, hydroxyl-terminated

SECTION XVI:**OTHER INFORMATION**

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.