

MATERIAL SAFETY DATA SHEET

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

Product identifier: Christo-Lube MCG 129

Product use: O-Ring Lubrication

Supplier name and address:

Thermal Dynamics Corporation

82 Benning Street
West Lebanon, NH 03784, USA
Phone: (603) 298-5711

Manufacturer's name and address:

Lubrication Technology Inc.

7595 Gallia Pike
Franklin Furnace, OH 45629, USA
Phone: (740) 574-5150

24 Hour Emergency Telephone #: (CHEMTREC) (800) 424-9300 USA / Canada
(703) 527-3887 International

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>% (weight)</u>	<u>OSHA</u>	<u>ACGIH</u>	<u>LC₅₀(rat, inh)</u>	<u>LD₅₀(mg/kg)</u>	
			<u>PEL</u>	<u>TLV</u>	<u>(ppm/4hr)</u>	<u>rat, oral</u>	<u>dermal, rabbit</u>
Perfluoropolyether (PFPE)	69991-61-3	60 - 70	N/Av	N/Av	N/Av	N/Av	N/Av
Polytetrafluoroethylene (PTFE)	9002-84-0	30 - 40	N/Av	N/Av	N/Av	N/Av	N/Av
Perfluoropolyoxalokanone hydrate ketone derivative	161075-14-5	5 - 10	N/Av	N/Av	N/Av	N/Av	N/Av

SECTION 3 — HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

White, odourless grease.

Caution! May cause eye irritation. High vapour concentrations may cause respiratory irritation and polymer fume fever.

POTENTIAL HEALTH EFFECTS

Target organs: Eyes, skin, respiratory system

Signs and symptoms of short-term (acute) exposure:

Inhalation: High vapour concentrations may result in mild irritation, cough, sore throat and wheezing. If product is heated and fumes are formed, inhalation may cause 'polymer fume fever'. Symptoms of 'polymer fume fever' may include fever, chills, headache, nausea and muscle aches.

Skin contact: No health effects expected from direct skin contact.

Eye contact: Contact with dusts may cause mechanical irritation. Symptoms may include tearing, blinking and conjunctivitis. If product is heated, fumes may cause eye irritation.

Ingestion: No health effects expected from small amounts. Large amounts may cause gastrointestinal discomfort.

Effects of long-term (chronic) exposure: None known.

Other important hazards: See TOXICOLOGICAL INFORMATION, Section 11.

SECTION 4 — FIRST AID MEASURES

- Inhalation:** No first aid should be necessary. If breathing difficulties occur, remove victim to fresh air and obtain medical attention.
- Skin contact:** If irritation occurs, wash skin thoroughly with mild soap and running water. Obtain medical attention if irritation persists. Launder clothing before reuse.
- Eye contact:** Immediately flush eyes with gently running water for at least 15 minutes. Obtain medical attention if pain or irritation develops.
- Ingestion:** No first aid should be necessary. If swallowed, DO NOT induce vomiting. Obtain medical attention if large amounts are swallowed, or if pain develops. Never give anything by mouth to an unconscious or convulsing person.

SECTION 5 — FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability: Product can burn, but is not combustible at normal working temperatures. Decomposition at temperatures above 230°C may cause the evolution of toxic gaseous fluorine compounds.

Flash point: N/Av

Auto-ignition temperature: N/Av

Lower flammable limit (% by volume): N/Av

Upper flammable limit (% by volume): N/Av

Explosion data: *Sensitivity to mechanical impact / static discharge:* Not expected to be sensitive to mechanical impact or static discharge under normal conditions.

Oxidizing properties: N/Av

Suitable extinguishing media: Dry chemical, foam, carbon dioxide or water spray.

Special fire-fighting procedures/equipment: Firefighters should wear proper protective equipment and a self-contained breathing apparatus. Move containers from fire area if it can be done without risk. Water spray may be useful in minimizing or dispersing vapours and cooling equipment exposed to heat and flame.

Hazardous combustion products: Carbon oxides, toxic hydrofluoric acid, tetrafluoroethylene monomer, other fluorocarbons (e.g. octafluoroisobutylene, carbon tetrafluoride and carbonyl fluoride), and other irritating fumes and smoke.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions: Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. Dike far ahead of the spill with non-combustible, inert absorbent material.

Spill response/Cleanup: Wear appropriate protective equipment. Eliminate all sources of heat and flame. Ventilate area of release. Stop leak if you can do so without risk. Contain and absorb spilled material with inert, non-combustible absorbent material, such as sand, then place in suitable, closed container for later disposal (see Section 13). Notify the appropriate authorities as required.

Prohibited materials: None known.

SECTION 7 — HANDLING AND STORAGE

Safe handling procedures: Wear appropriate protective equipment during handling. Use with adequate ventilation. Avoid inhaling vapours. Avoid contact with eyes, skin and clothing. Keep away from heat and flame. Keep away from incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling.

Storage requirements: Store in a cool, dry, well-ventilated area away from all sources of ignition and incompatible materials. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials: Strong or non aqueous alkalis and Lewis acids above 100°C.

Special packaging materials: Always keep in containers made of the same materials as the supply container.

SECTION 8 — EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation and engineering controls: Use in a well ventilated area. Mechanical exhaust may be required in confined areas. Local exhaust should not be required.

Respiratory protection: No respiratory protection necessary under normal working conditions. In emergency situations or when concentrations are not known, a self-contained breathing apparatus may be required. Advice should be sought from respiratory protection specialists.

Protective gloves: Disposable impervious gloves are recommended when working with this material. Advice should be sought from glove suppliers.

Eye protection: Safety glasses are required.

Other protective equipment: An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

Permissible exposure levels: See Section 2.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Physical form, colour and odour: White, odourless grease.

Odour threshold: N/Av

Boiling point: N/Av

Specific gravity (water=1): 1.990

Coefficient of oil/water distribution: N/Av

Solubility in water: Insoluble

Volatile organic compounds (VOC's): N/Av

pH: N/Av

Evaporation rate (nBuAC=1): N/Av

Melting/freezing point: > 200°C

Vapour pressure (mm Hg @ 20°C): < 0.01

Vapour density (Air=1): N/Av

Percent Volatile by Weight: N/Av

SECTION 10 — STABILITY AND REACTIVITY

Stability and reactivity: Stable under the recommended storage and handling conditions prescribed.

Hazardous polymerization: Will not occur.

Conditions to avoid: Temperatures above 230°C.

Materials to avoid: Incompatible materials (see Section 7).

Hazardous decomposition products: None known. Refer to 'Hazardous combustion products', Section 5.

SECTION 11 — TOXICOLOGICAL INFORMATION

Routes of exposure: Eye contact, skin contact, ingestion and inhalation.

Toxicological data: There is no available data for the product itself, only for the ingredients.

LD₅₀: See Section 2; **LC₅₀:** See Section 2

Carcinogenicity: None of the ingredients listed are classified as carcinogenic by IARC or ACGIH.

Teratogenicity, mutagenicity, other reproductive effects: None known.

Sensitization to material: None known.

Synergistic materials: None known.

Conditions aggravated by exposure: None known.

SECTION 12 — ECOLOGICAL INFORMATION

Ecotoxicological information: The ecological characteristics of this product have not been fully investigated. The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. Do not discharge product unmonitored into the environment.

Chemical fate information: There is no data available on the product itself.

Aquatic toxicity: There is no data available on the product.

SECTION 13 — DISPOSAL CONSIDERATIONS

Handling for disposal: Handle waste according to recommendations in Section 7.

Methods of disposal: Containers should be disposed of in accordance with all applicable federal, provincial, state, and local regulations.

SECTION 14 — TRANSPORT INFORMATION

Canadian Transportation of Dangerous Goods Regulations (TDGR) Shipping Information:

This product is not regulated for transportation within Canada.

US DOT 49 CFR information:

This product is not regulated for transportation by ground within the continental United States.

SECTION 15 — REGULATORY INFORMATION

WHMIS information:

This material is not a WHMIS controlled product in Canada.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

CEPA information: All ingredients are listed on the DSL.

TSCA information: All ingredients are listed on the TSCA inventory.

SECTION 15 — REGULATORY INFORMATION Continued

HMIS Rating: Health: 1
Flammability: 1
Reactivity: 0

SECTION 16 — OTHER INFORMATION

Legend: ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CEPA: Canadian Environmental Protection Act
DSL: Domestic Substances List
HMIS: Hazardous Materials Identification System
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
N/Ap: not applicable
N/Av: not available
NIOSH: National Institute of Occupational Safety and Health
OSHA: Occupational Safety & Health Administration
PEL: Permissible Exposure Limit
PSI: Pounds per Square Inch
RTECS: Registry of Toxic Effects of Chemical Substances
TSCA: Toxic Substances Control Act
TLV: Threshold Limit Values
WHMIS: Workplace Hazardous Materials Information System

- References:
1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2006.
 2. International Agency for Research on Cancer Monographs, searched 2007.
 3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2007 (Chempendium, HSDB and RTECs).
 4. Material Safety Data Sheet from manufacturer.

Prepared by: Thermal Dynamics Corporation
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