

The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries. DuPont 1 Page Material Safety Data Sheet "KRYTOX" 1500, 1600, 16000 & 16000N Series Fluorinated Vacuum Pump Fluids/Oils 5357PP Revised 18-JAN-2001 _____ CHEMICAL PRODUCT/COMPANY IDENTIFICATION _____ Material Identification "Krytox" is a registered trademark of DuPont. Corporate MSDS Number : DU002671 Grade : See Additional Information and References Tradenames and Synonyms "Krytox" NBF 140 Company Identification MANUFACTURER/DISTRIBUTOR DuPont 1007 Market Street Wilmington, DE 19898 PHONE NUMBERS Product Information : 1-800-441-7515 (outside the U.S. 302 - 774 - 1000)Transport Emergency : CHEMTREC 1-800-424-9300(outside U.S. 703-527-3887) Medical Emergency : 1-800-441-3637 (outside the U.S. 302 - 774 - 1000) COMPOSITION/INFORMATION ON INGREDIENTS _____ Components Material CAS Number % 60164-51-4 100 Perfluoroalkylether _____ HAZARDS IDENTIFICATION # Potential Health Effects Skin contact may cause reddening of the skin. The product was not a skin irritant or skin sensitizer in a 100 person human patch test. Based on data from animal tests, eye contact may cause eye irritation with discomfort, tearing or blurring of vision. Inhalation of fluorine containing compounds released as decomposition products from overheated or burning product

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(HAZARDS IDENTIFICATION - Continued)

may cause lung irritation and pulmonary edema which require medical treatment.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

The compound is not likely to be hazardous by skin contact but cleansing the skin after use is advisable.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

Notes to Physicians

Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400 mL water and mix thoroughly. Administer 5 mL/kg, or 350 mL for an average adult.

FIRE FIGHTING MEASURES Flammable Properties

Flash Point: Does not igniteMethod: PMCC

Non-combustible.

(FIRE FIGHTING MEASURES - Continued)

Extinguishing Media

As appropriate for combustibles in area.

Fire Fighting Instructions

Wear self-contained breathing apparatus. Wear full protective equipment.

Decomposition at flame temperatures may form toxic fluorine compounds. Avoid breathing decomposition products.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Spill Clean Up

Soak up with sawdust, sand, oil dry or other absorbent material. Shovel or sweep up.

Accidental Release Measures

Place in container for disposal. Remove source of heat and flame.

HANDLING AND STORAGE

Handling (Personnel)

Perfluoropolyether oils are considered to be inert and of low toxicity. However, as with all lubricants it is important to observe correct hygiene practices. Avoid contact with eyes. Avoid contact with skin. Wash thoroughly after handling.

Storage

Keep container tightly closed. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

Keep away from heat and flames to avoid decomposition products.

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_____ EXPOSURE CONTROLS/PERSONAL PROTECTION Engineering Controls Keep container tightly closed. Use ventilation when the oil is heated above 550 degF. Keep away from heat and flames. Personal Protective Equipment EYE/FACE PROTECTION Wear safety glasses or coverall chemical splash goggles. REKSPIRATOR Wear NIOSH approved respiratory protection as appropriate. PROTECTIVE CLOTHING Where there is potential for skin contact have available and wear as appropriate, impervious gloves, apron, pants, and jacket. Exposure Guidelines Exposure Limits "KRYTOX" 1500, 1600, 16000 & 16000N Series Fluorinated Vacuum Pump Fluids/Oils PEL (OSHA) : None Established TLV (ACGIH) : None Established _____ PHYSICAL AND CHEMICAL PROPERTIES _____ Physical Data Solubility in Water : Negligible WT% : Neutral ъH Odor : Odorless Form : Liquid, viscous oil Color : Colorless : 1.86-1.91 @ 24 deg C (75 deg F) Specific Gravity Pour Point : -45 to -5 deg C (-49 to -25 deg F)

_____ STABILITY AND REACTIVITY _____

Chemical Stability

Stable.

Incompatibility with Other Materials

None reasonably foreseeable.

Decomposition

Heating above 350 degC (662 degF) may form potentially toxic fluorine compounds. Depolymerization may occur in the presence of some metal oxides at temperatures above 288 degC (550 degF). Decomposition occurs at increasing rates as temperature is raised above 355 degC (670 degF).

Polymerization

Polymerization will not occur.

_____ TOXICOLOGICAL INFORMATION

Animal Data

Perfluoroalkylether:

Inhalation 4 Hour ALC:	>19.54 mg/L in rats
Skin Absorption ALD:	>17,000 mg/kg in rabbits
Oral ALD:	>25,000 mg/kg in rats

The product is a mild skin and eye irritant, but is not a skin sensitizer in tests on animals. A single inhalation exposure caused nonspecific effects such as respiratory irritation. Exposure to thermal decomposition products produced irritation, irregular respiration, tremors and increased liver weight. Repeated inhalation exposures to 10, 100, or 1000 mg/m3 caused increased lung weights and microscopic particle-laden macrophages in the lungs and lymph nodes; this was an expected pulmonary response to high aerosol concentrations of an inert material. No animal test reports are available to define carcinogenic, developmental, or reproductive hazards. Tests have shown that the product did not cause genetic damage in bacterial cell cultures.

_____ DISPOSAL CONSIDERATIONS _____ Waste Disposal Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not flush to surface water or sanitary sewer system. TRANSPORTATION INFORMATION _____ Shipping Information Not Regulated as a hazardous material by DOT, IMO, or IATA. _____ REGULATORY INFORMATION _____ U.S. Federal Regulations TSCA Inventory Status : Reported/Included. TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312 Acute : Yes Chronic : No Fire : No Reactivity : No Pressure : No OTHER INFORMATION _____ NFPA, NPCA-HMIS NPCA-HMIS Rating : 1 Health Flammability : 0 Reactivity : 0 Personal Protection rating to be supplied by user depending on use conditions. Additional Information GRADES 1506, 1514, 1525, 1618, 1625, 1645, 16140, 16256, 16350, 16140N & 16256N

(Continued)

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility	for	MSDS	:	MSDS Coordinato:	r	
Address			:	DuPont Chemical	Solutions	Enterprise
				Wilmington, DE	19898	
Telephone			:	800-441-7515		

Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS