

MATERIAL SAFETY DATA SHEET

LITHIUM GREASE EP

#0 - #00 - #1 - #2

1. PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME LITHIUM GREASE EP (ALL GRADES)

SYNONYMS LITHIUM GREASE EP-0, LITHIUM GREASE EP-00, LITHIUM GREASE EP-1,
LITHIUM GREASE EP-2.

PRODUCT USE Lubricating Grease

SUPPLIER **Varouh Oil, Inc.**
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Date of last issue 2005-01-20

2. COMPOSITION AND INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS No.	WEIGHT
DISTILLATES, PETROLEUM, REFINED HEAVY NAPHTHENIC (CAS 64741-96-4 OR 64742-52-5)	Variable	85-97 %
*OCTADECANOIC ACID, 12-HYDROXY-, MONOLITHIUM SALT	7620-77-1	2-12 %
*PHOSPHORODITHIOIC ACID, O,O-DI-C1-14-ALKYL ESTERS, ZINC SALTS	68649-42-3	0.5-1.5 %

* This chemical(s) is hazardous according to OSHA/WHIMIS criteria

COMPOSITION COMMENTS Refer to section eight for exposure limits on ingredients.
Chemical ingredients not regulated by OSHA or SARA are treated confidentially.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Exposure to vapors generated at high temperatures may cause respiratory irritation. For further information, please refer to section 11. Not regarded as a health hazard under current legislation.

SENSITIZATION

No known information.

CARCINOGENICITY

IARC: Not listed as a Group 1, 2A, or 2B agent. OSHA: Not regulated. NTP: Not listed.

TERATOGENICITY

No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

HEALTH WARNINGS

INHALATION. Heating can generate vapors that may cause respiratory irritation, nausea and headaches. Inhalation hazard at room temperature is unlikely due to the low volatility of this product. SKIN CONTACT. Repeated or prolonged contact can result in drying of the skin. EYE CONTACT. Slightly irritating. INGESTION. Can cause stomach ache and vomiting. Main hazard, if ingested, is aspiration into the lungs and subsequent pneumonitis.

ROUTE OF ENTRY

Inhalation. Skin and/or eye contact. Ingestion.

4. FIRST AID MEASURES

INHALATION

Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor of hot product, immediately remove from source of exposure. Move the exposed person to fresh air at once. For breathing difficulties oxygen may be necessary. Get medical attention if any discomfort continues.

EYES

Rinse the eye with water immediately. Continue to rinse for at least 15 minutes. Contact physician if discomfort continues.

SKIN

Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.

INGESTION

DO NOT INDUCE VOMITING! Get medical attention immediately!

5. FIRE FIGHTING MEASURES

FLASH POINT (°C)

224 (435°F) Cd OC (Cleveland open cup).

FLAMMABILITY LIMIT - LOWER(%)

N/D

FLAMMABILITY LIMIT - UPPER(%)

N/D

EXTINGUISHING MEDIA

Use: Carbon dioxide (CO₂). Dry chemicals, sand, dolomite etc. Alcohol resistant foam. Water spray, fog or mist.

SPECIAL FIRE FIGHTING PROCEDURES

Use water to keep fire exposed containers cool and disperse vapors. Water spray may be used to flush spills away from exposures and dilute spills to non-flammable mixtures. Avoid water in straight hose stream; will scatter and spread fire. Keep run-off water out of sewers and water sources. Dike for water control.

UNUSUAL FIRE & EXPLOSION HAZARDS

Pressure will increase in over heated, closed containers.

HAZARDOUS COMBUSTION PRODUCTS

Acrid smoke/fumes. Oxides of: Carbon. Sulfur.

PROTECTIVE MEASURES IN CASE OF FIRE

Self-contained breathing equipment and chemical resistant clothing recommended.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Minimize skin contact.

PRECAUTIONS TO PROTECT THE ENVIRONMENT

Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas. Assure conformity with applicable government regulations.

SPILL CLEAN-UP PROCEDURES

Keep all sources of ignition and hot metal surfaces away from spill. Avoid contact with eyes or skin. Place leaking containers in well ventilated area. If fire potential exists, blanket spill with foam or use water spray to disperse vapors. Contain spill to minimize contaminated area and facilitate salvage or disposal. To clean up spill, flush area sparingly with water or use absorbent material. Avoid discharge to natural water ways.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS

Keep away from heat, sparks and open flame. Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Do not reuse container. Keep lid closed when not in use. Do not store or mix with strong oxidizers. Avoid spilling, skin and eye contact. Eye wash and emergency shower must be available at the work place.

STORAGE PRECAUTIONS

Store separate from strong acids and oxidizers. Keep away from heat, sparks and open flame.

STORAGE CRITERIA

Chemical storage.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

COMPONENT	STD	TWA	STEL	TWA	STEL
DISTILLATES, PETROLEUM, REFINED HEAVY NAPHTHENIC (CAS 64741-96-4 OR 64742-52-5)	OSHA			5 mg/m3 (oil mist)	
	ACGIH			5 mg/m3 (oil mist)	10 mg/m3 (oil mist)

PROTECTIVE EQUIPMENT



ENGINEERING CONTROLS	Use engineering controls to reduce air contamination to permissible exposure level.
VENTILATION	No specific ventilation requirements noted, but forced ventilation may still be required if air contamination exceeds acceptable level.
RESPIRATORS	No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists.
PROTECTIVE GLOVES	Chemical resistant gloves recommended preventing prolonged or repeated contact. Use protective gloves made of: Neoprene, nitrile, polyethylene or PVC. or latex.
EYE PROTECTION	Use eye protection.
PROTECTIVE CLOTHING	Wear appropriate clothing to prevent repeated or prolonged skin contact.
HYGIENIC WORK PRACTICES	Wash at the end of each work shift and before eating, smoking and using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE	Grease.		
COLOR	Amber.		
ODOR	Mild (or faint). Petroleum.		
SOLUBILITY DESCRIPTION	Insoluble in water.		
DENSITY	0.90	Temperature (°C)	15.6 (60°F)
VAPOR DENSITY (air=1)	> 5		
VAPOR PRESSURE	< 0.1 mmHg	Temperature (°C)	20 (68°F)
EVAPORATION RATE	< 1	Reference	BuAc=1

10. STABILITY AND REACTIVITY

STABILITY	Normally stable.
CONDITIONS TO AVOID	Avoid contact with acids and oxidizing substances.
HAZARDOUS POLYMERIZATION	Will not occur.
POLYMERIZATION DESCRIPTION	Not applicable
HAZARDOUS DECOMPOSITION PRODUCTS	Oxides of: Carbon. Sulfur.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION COMPONENT	No experimental toxicological data on the preparation as such is available. DISTILLATES, PETROLEUM, REFINED HEAVY NAPHTHENIC (CAS 64741-96-4 OR 64742-52-5)
TOXICOLOGICAL DATA	Carcinogenicity. IP 346 1.2-2.93% Corrosive effects. Eye. Rabbit. < 15/110 Corrosive effects. Skin. Rabbit. < 0.5/8 > 5000 mg/kg (oral rat) > 3000 mg/kg (skn rat) N/A.
TOXIC DOSE - LD 50	
TOXIC DOSE - LD 50 SKIN	
TOXIC CONC. - LC 50	
CARCINOGENICITY	Base oils in this product contain < 3% DMSO Extractable total polycyclic aromatic compound (PAC) per IP 346.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION	There is no ecological data on the product itself.
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13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS	Spilled material, unused contents and empty containers must be disposed of in accordance with local, state and federal regulations.
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14. TRANSPORT INFORMATION

DOT HAZARD CLASS	Not regulated.
U.S. DOT HAZARD LABEL	No DOT label requirement
SEA TRANSPORT NOTES	Not regulated per IMDG.
AIR TRANSPORT NOTES	Not regulated per IATA.

15. REGULATORY INFORMATION

US FEDERAL REGULATIONS

COMPONENT	SARA 302	CERCLA	SARA 313
DISTILLATES, PETROLEUM, REFINED HEAVY NAPHTHENIC (CAS 64741-96-4 OR 64742-52-5)	No	No	No
OCTADECANOIC ACID, 12-HYDROXY-, MONOLITHIUM SALT	No	No	No

PHOSPHORODITHIOIC ACID, O,O-DI-C1-14-ALKYL ESTERS, ZINC SALTS No *** N982 - Zn

REGULATORY STATUS

*** Indicates that no RQ is assigned to this generic or broad class, although the class is a CERCLA hazardous substance. See 50 Federal Register 13456 (April 4, 1985). Values in Section 313 column represent Category Codes for reporting under Section 313.

CLEAN AIR ACT

SARA HAZARD CATEGORIES

None

US STATE REGULATIONS

COMPONENT

PHOSPHORODITHIOIC ACID, O,O-DI-C1-14-ALKYL ESTERS, ZINC SALTS

CA	MA	FL	M	N	NJ	PA	RI
			Yes	Yes	EH		

STATE REGULATORY STATUS

PROPOSITION 65 REPRODUCTIVE HAZARD: This product may contain the following chemical(s) considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing reproductive toxicity, and for which warnings are now required:
N-Methylpyrrolidone, developmental hazard, CAS# 872-50-4 traces < 35 ppm

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM - WHMIS

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

CONTROLLED PRODUCT CLASSIFICATION

Not a controlled product.

Risk phrases

No R-phrases required

GLOBAL INVENTORIES

COMPONENT

DISTILLATES, PETROLEUM, REFINED HEAVY NAPHTHENIC (CAS 64741-96-4 OR 64742-52-5)
OCTADECANOIC ACID, 12-HYDROXY-, MONOLITHIUM SALT
PHOSPHORODITHIOIC ACID, O,O-DI-C1-14-ALKYL ESTERS, ZINC SALTS

CAN	US	EU	AUS	JAP	KOR	PLHP	CHN
DSL	Yes	EINECS	Yes	Yes	Yes	Yes	Yes
DSL	Yes	EINECS	Yes	2-1416	Yes	Yes	Yes
NPRI	Yes	EINECS	Yes	Yes	Yes	Yes	Yes

CANADA CEPA: All components of this product comply with new substance notification requirements under the Canadian Environmental Protection Act (CEPA).
CANADA NPRI: The National Pollutant Release Inventory (NPRI) requires companies in Canada to report information on releases and transfers of pollutants to the Government of Canada on an annual basis.

AUSTRALIA (AICS)

All components in this product are listed on the Australian Inventory of Chemical Substances (AICS) or are exempt from AICS requirements.

16. OTHER INFORMATION

NFPA-HMIS HAZARD RATING

HEALTH	Irritation, minor residual injury (1) - HMIS/NFPA
FLAMMABILITY	Burns only if pre-heated (1) - HMIS/NFPA
REACTIVITY	Normally Stable (0) - HMIS/NFPA
PERSONAL PROTECTION INDEX	B - Safety Eyewear and Gloves
REVISION COMMENTS	Section 2: Ingredients Section 15: US Regulatory Status. Section 15: Inventory Status
DATE	2005-01-20
DISCLAIMER	While the information and recommendations set forth herein are believed to be accurate as of the date thereof, the company makes no warranty with respect thereto and disclaims all liability from reliance therein.
* Information revised since previous MSDS version	
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