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MATERIAL SAFETY DATA SHEET

EMERGENCY OVERVIEW

This light yellow slippery liquid has acute and chronic health effects for eyes and nervous system. Other organs can be targeted if absorbed thru skin cuts or ingested. Please refer to the discussion in section three. Get immediate medical attention if ingested.

NFPA RATING: HEALTH: 1 FLAMMABILITY: 1 REACTIVITY: 0

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

GENERIC NAME: Brake fluid

ISSUE DATE:

March 1, 2006

THIS LUBRICANTS USA PRODUCT IS:

HEAVY DUTY BRAKE FLUID

CAS NUMBER:

Mixture

SYNONYMS / GENERAL NAMES:

DOT 3 brake fluid

24 HOUR EMERGENCY TELEPHONE:

(CHEMTREC) 1-800-424-9300

TECHNICAL INFORMATION:

1-800-442-5823

2. COMPOSITION / INFORMATION ON INGREDIENTS / HAZARDOUS INGREDIENTS

COMPONENTS	CAS NO.	%	HAZARD DATA
			PEL-OSH//TLV-ACGIH
Glycol ethers,			
Diethylene glycol monobutyl ether	112-34-5	1-5	NE//NE
Diethylene glycol monomethyl ether	111-90-0	1-2	NE//NE
Triethyleneglycol monobutyl ether	143-22-6	23-29	NE//NE
Triethylene glycol monomethyl ether	112-35-6	14-16	NE//NE
Triethylene glycol ethylether	112-50-5	5-6	NE//NE
Tetraethylene glycol monobutyl ether	155-93-4	10-14	NE//NE
Polyethyleneglycol monomethyl ether	900-47-44	0-4	NE//NE
Glycols			
Diethylene glycol	111-46-6	14-15	100 mg/m3 // 50 ppm (ceiling)
Triethylene glycol	112-27-6	5-6	NE//NE
Tetraethylene glycol	112-60-7	8-11	NE//NE
Oxidation inhibitors	Proprietary		
Corrosion inhibitors	Proprietary		

3. HAZARDOUS IDENTIFICATION

ROUTES OF ENTRY:	Skin contact, inhalation.
TARGET ORGANS:	Skin, lungs, eyes
INHALATION:	At room temperature vapors are minimal due to physical properties.
IRRITANCY:	This product can cause mild, transient, eye irritation with short-term contact with liquids or sprays.
REPRODUCTIVE EFFECTS:	WARNING! Contains minor components which when tested separately in animals have shown fetotoxicity or birth defects. Contains component which has caused slight toxic effects to fetus at doses nontoxic to the mother following skin contact. Exposures

	having no adverse effects on the mother should have no effect on the fetus.
CANCER INFORMATION:	This product does contain components which, in animals, have been shown to cause blood, kidney, liver or testicular effects.

4. FIRST AID MEASURES

EYES:	May cause moderate corneal injury. Check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention.
DERMAL:	A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Prolonged or repeated skin contact with some of the ingredients may cause drowsiness. Massive contact with damaged skin or of material sufficiently hot to burn skin may result in absorption of potentially lethal amounts. Remove contaminated shoes and clothing, wipe off excess material. Wash exposed skin with soap and water. Seek medical attention if tissue appears damaged or if irritation. Thoroughly clean contaminated clothing before reuse. Discard contaminated leather goods.
INGESTION:	Single dose oral toxicity is low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury.
INHALATION:	Vapors are minimal due to physical properties: A single exposure is not likely to be hazardous. Move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If breathing is difficult, a qualified individual should administer 100 percent humidified oxygen. Seek medical attention immediately. Keep the affected individual warm and at rest.
INJECTION:	Injection of fluid requires immediate medical attention.

5. FIRE FIGHTING MEASURES

FLASH POINT, °C (°F):	133°C (272°F) by PMCC method
FLAMMABLE LIMITS (% BY VOLUME):	LOWER: NO DATA UPPER: NO DATA
EXTINGUISHING MEDIA:	Use dry chemical, alcohol resistant foam, carbon dioxide or water fog.
SPECIAL FIRE FIGHTING PROCEDURES:	See instructions below
AUTO IGNITION TEMPERATURE:	N/A
EXPLOSION DATA:	N/A
NFPA RATING:	HEALTH: <u>3</u> FLAMMABILITY: <u>1</u> REACTIVITY <u>0</u>
INSTRUCTIONS:	Keep unnecessary people away. Isolate hazard area and deny unnecessary entry. Water fog, carbon dioxide, and dry chemical foam. For large scale fires alcohol resistant foams are preferred if available. General-purpose synthetic foams or protein foams may function, but much less effectively. Water may be used to flush spills away from fire exposures and to dilute spills to non-flammable mixtures. If possible contain fire run off water. For large scale fires direct water stream may cause violent frothing, but fine water spray may help control situation.

6. ACCIDENTAL RELEASE MEASURES

SPILL PROCEDURES:	Do not touch damaged containers or spilled material unless wearing appropriate protective equipment. Slipping hazard—do not walk through spilled material. Stop leak if you can do so without risk. For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. Prevent entry into waterways or sewers. In urban area, cleanup spills as soon as possible. In natural environments, seek cleanup advice from specialists to minimize physical habitat damage. This material will sink in water. Absorbent pads and similar materials can be used. Comply with all laws and regulations.
Ecotoxicity	Discharges are expected to cause only localized and non-persistent environmental damage. Toxic to many water organisms. Not expected to bioconcentrate in aquatic organisms. Fish are threatened because of lack of oxygen. LC 50 for shrimp is 100 ppm in 48 hr with aeration. LC 50 rainbow trout 41000 mg/l for 96 hours.

Environmental fate The product will contaminate water. Biodegradation in soil and water is a major fate

process. For detailed ecological call the non-emergency number shown in section 1.

7. HANDLING AND STORAGE

HANDLING & STORAGE PROCEDURES:

Avoid water contamination and extreme temperatures to minimize product degradation. Keep container closed. Do not store with strong oxidizing agents. Do not store at temperatures above 120°F or in direct sunlight for extended periods of time.

Empty containers may contain product residues that can ignite with explosive force. Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to flames, sparks, heat or other potential ignition sources. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:	Provide exhaust ventilation or other engineering controls to keep the airborne concentration of mists and/or vapors below the recommended exposure limits. An eye wash station and safety shower should be located near the workstation.
GLOVES PROTECTION:	Use gloves constructed of chemical resistant materials such as neoprene or heavy nitrile rubber if frequent or prolonged contact is expected. Use heat protective gloves when handling product at elevated temperatures.
EYE PROTECTION:	Safety glasses equipped with side shields should be adequate protection under most conditions of use. Wear goggles and/or face shield if splashing or spraying is likely, especially if material is heated above 125° F (or 51° C). Have suitable eye washwater available.
RESPIRATORY PROTECTION:	Vaporization or misting is not expected at ambient temperatures. Therefore, the need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).
CLOTHING RECOMMENDATION:	Avoid prolonged and/or repeated skin contact, especially after this product has been used in a crankcase. If splashing or spraying is expected chemical-resistant (Tyvek®, nitrile or neoprene) clothing should be worn. This might include long-sleeves, apron, slicker suit, boots and additional facial protection. If general contact occurs, promptly remove soaked clothing and take a shower.
OTHER COMMENTS:	Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities or leaving work. Since standards/control limits have not been established for this product, the exposure limits shown below are suggested as minimum control guidelines.
Occupational exposure guidelines	Applicable workplace exposure levels TWA: 50 STEL; 20 (mg/M ³) from ACGIH (TLV) TWA: 50 (mg/ M ³) from OSHA (PEL)

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Light yellow slightly viscous liquid
ODOR:	Mild petroleum odor
pH:	Basic
VAPOR PRESSURE, mm Hg (25°C):	<0.0001
VAPOR DENSITY:	na
MELTING POINT:	(Pour point -40 C, -40 F)
BOILING POINT, 760 mm Hg, °C:	221 C (430 F)
SOLUBILITY IN WATER:	Infinitely soluble in water.
SPECIFIC GRAVITY:	1.03 (Water = 1)
EVAPORATION RATE:	<0.01 (n-butyl acetate = 1)
VISCOSITY 40°C (100°C)	0 cSt @ 40 C

MOLECULAR WEIGHT:	N/A
PERCENT VOLATILE:	Negligible volatility

10. STABILITY AND REACTIVITY

STABILITY:	Stable
INCOMPATIBILITY:	Strong oxidizers
POLYMERIZATION:	Will not occur
THERMAL DECOMPOSITION:	CO ₂ , CO, smoke, fumes, aldehydes, ketones, organic acids and polymer fragments.

11. TOXICOLOGICAL INFORMATION

EYE IRRITATION:	This product can cause moderate to severe eye irritation. Vapors can also cause severe eye irritation. May cause moderate corneal injury.
DERMAL IRRITATION:	Product is mildly irritating to the skin and slightly toxic on prolonged or repeated contact.
INHALATION TOXICITY:	Vapors are mildly to markedly irritating to the lungs depending on the exposure level.
INGESTION IRRITATION:	The oral LD50 for rats is believe to be >2000 mg/kg. No relevant information found for major components. The minor components when tested separately have caused kidney, liver, gastrointestinal, testicular and central nervous system effects: bladder stones, nausea and vomiting.
AGGRAVATED MEDICAL CONDITIONS:	Preexisting skin, eye and respiratory disorders may be aggravated by exposure to this product. Impaired kidney and liver functions from preexisting disorders may be aggravated by exposure to this product.
CHRONIC OR ACUTE EXPOSURE SYMPTOMS	The minor components in this formulation when tested separately (by ingestion) have caused kidney, liver, gastrointestinal, testicular and central nervous system effects, stones, nausea and vomiting. Minor components have shown little or no birth defect risk for humans although fetal toxicity has occurred in animal studies and one component caused birth defects in animals following ingestion of large doses.
OTHER REMARKS	

12. HEALTH INFORMATION

HMIS CODE:	HEALTH: 3	FIRE: 1	REACTIVITY: 0
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No	HIGHLY TOXIC	No	SENSITIZER
No	TOXIC	No	REPRODUCTIVE EFFECTS
No	CORROSIVE	No	MUTAGEN
No	IRRITANT		

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: It is the responsibility of the user to determine if the material is a hazardous waste at the time of disposal. Determine compliance status with all applicable requirements prior to disposal.

14. TRANSPORT INFORMATION**DOT (DEPARTMENT OF TRANSPORTATION)**

PROPER SHIPPING NAME:	
HAZARD CLASS:	
HAZARD IDENTIFICATION NUMBER:	

DOT PLACARD:	N/A
COMPATIBILITY CATEGORY:	N/A

15. REGULATORY INFORMATION

SARA SECTION 313 - TOXIC CHEMICALS:

This product contains toxic chemicals under SARA Section 313 and 40 CFR Part 372.

<u>Chemical Name</u>	<u>CAS number</u>	<u>Concentration</u>
Glycol ethers	proprietary	<78%

SARA SECTION 311 - HAZARD CATEGORIES:

This product may meet one or more of the criteria for the hazard categories defined in 40 CFR Part 370 as established by Sections 311 and 312 of SARA as indicated below:

Yes	IMMEDIATE (ACUTE) HEALTH HAZARD	NO	SUDDEN RELEASE OF PRESSURE HAZARD
Yes	DELAYED (CHRONIC) HEALTH HAZARD	NO	REACTIVE HAZARD
NO	FIRE HAZARD		

SARA SECTION 302 - EXTREMELY HAZARDOUS WASTE:

This product is not known to contain any components in concentrations greater than one percent that are listed as Extremely Hazardous Substances in 40 CFR Part 355 pursuant to the requirements of Section 302(a) of SARA.

CLEAN WATER ACT (CWA):

Under the CWA, discharges of fluids to surface water without proper Federal and State permits must be reported immediately to the National Response Center at (800) 424-8802.

CERCLA HAZARDOUS SUBSTANCES:

As defined by CERCLA, the term "hazardous substance" does not include any ingredients or fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance.

U.S. TSCA INVENTORY

TSCA Inventory: No ingredients.

CALIFORNIA PROPOSITION 65

This product contains no ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute.

NEW JERSEY RIGHT-TO-KNOW LABEL

Brake fluid

ADDITIONAL REGULATORY REMARKS

None.

16. OTHER INFORMATION

The information in this Material Safety Data Sheet should be provided to all who will use, handle, store, transport, or otherwise be exposed to this product. This information was prepared for the guidance of plant engineering, operations and management and for persons working with or handling this product. Lubricants USA believes this information to be reliable and up to date as of the date of publication, but makes no warranty that it is.

NFPA HAZARD RATING	least - 0	slight - 1	moderate - 2	high - 3	extreme - 4
HMIS HEALTH RATING	least - 0	slight - 1	moderate - 2	high - 3	extreme - 4

AP = approximately EQ = equal > = greater than < = less than NA = not applicable
 ND = no data NE = not established

ACGIH = American Conference of Governmental Industrial Hygienists
 CERCLA = Comprehensive Environmental Response, Compensation and Liability Act (1980)
 EPA = Environmental Protection Agency
 IARC = International Agency for Research on Cancer
 NIOSH = National Institute of Occupational Safety and Health
 NPCA = National Paint and Coating Manufacturers Association
 OSHA = Occupational Safety and Health Administration
 SARA = Superfund Amendments and Reauthorization Act (1986)

AIHA = American Industrial Hygiene Association
 HMIS = Hazardous Materials Information System
 NFPA = National Fire Protection Association
 NLGI = National Lubricating Grease Institute
 NTP = National Toxicology Program
 RQ = Reportable quantity
 TSCA = Toxic Substance Control Act