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Compounding  
 Blending  
 Blow Molding  
 Packaging

## MATERIAL SAFETY DATA SHEETS

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**GENERIC NAME:** BRAKE FLUID

**ISSUE DATE:** January 25, 2001

**THIS GENERIC MSDS REPRESENTS THE FOLLOWING AMALIE OIL CO. PRODUCTS:**  
 PARTS PLUS<sup>®</sup> SUPER HEAVY DUTY DRUM & DISC DOT 3 BRAKE FLUID

**CAS NUMBER:** MIXTURE  
**SYNONYMS / GENERAL NAMES:** BRAKE FLUID  
**24 HOUR EMERGENCY TELEPHONE:** (CHEMTREC) 1-800-424-9300  
**TECHNICAL INFORMATION:** 813-248-1988

### 2. COMPOSITION / INFORMATION ON INGREDIENTS / HAZARDOUS INGREDIENTS

COMPONENTS	CAS NO.	%	HAZARD DATA
BLEND OF GLYCOLS, GLYCOL ETHERS AND INHIBITOR	MIXTURE	100	ORAL (LD50): >5000 mg/kg DERMAL (LD50): >2000 mg/kg

**HAZARDOUS INGREDIENTS:** GLYCOL ETHERS

**HAZARDOUS PER 29 CFR 1916.1200:** YES

### 3. HAZARDOUS IDENTIFICATION

<b>ROUTES OF ENTRY:</b>	SKIN CONTACT, DERMAL CONTACT, INGESTION
<b>TARGET ORGANS:</b>	SKIN
<b>IRRITANCY:</b>	THIS MATERIAL CAN CAUSE MILD SKIN, EYE, AND MUCOUS MEMBRANE IRRITATION FROM PROLONGED OR REPEATED EXPOSURE.
<b>REPRODUCTIVE EFFECTS:</b>	N/A
<b>CANCER INFORMATION:</b>	THIS PRODUCT DOES NOT CONTAIN ANY COMPONENTS AT CONCENTRATIONS ABOVE 0.1% WHICH ARE CONSIDERED CARCINOGENIC BY OSHA, IARC, OR NTP.

### 4. FIRST AID MEASURES

<b>EYES:</b>	CHECK FOR AND REMOVE CONTACT LENSES. FLUSH EYES WITH COOL, CLEAN, LOW-PRESSURE WATER WHILE OCCASIONALLY LIFTING AND LOWERING EYELIDS. SEEK MEDICAL ATTENTION IF EXCESSIVE TEARING, REDNESS, OR PAIN PERSISTS.
<b>DERMAL:</b>	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 PERSISTS. THOROUGHLY CLEAN CONTAMINATED CLOTHING BEFORE REUSE. DISCARD CONTAMINATED LEATHER GOODS. IF MATERIAL IS INJECTED UNDER THE SKIN, INTO MUSCLE, OR INTO THE BLOODSTREAM, SEEK MEDICAL ATTENTION IMMEDIATELY.
<b>INGESTION:</b>	DO NOT INDUCE VOMITING UNLESS DIRECTED TO BY A PHYSICIAN. DO NOT GIVE ANYTHING TO DRINK UNLESS DIRECTED TO BY A PHYSICIAN. NEVER GIVE ANYTHING BY MOUTH TO A PERSON WHO IS NOT FULLY CONSCIOUS. SEEK MEDICAL ATTENTION IMMEDIATELY.
<b>INHALATION:</b>	MOVE VICTIM TO FRESH AIR. IF VICTIM IS NOT BREATHING, IMMEDIATELY BEGIN RESCUE BREATHING. IF BREATHING IS DIFFICULT, 100 PERCENT HUMIDIFIED OXYGEN SHOULD BE ADMINISTERED BY A QUALIFIED INDIVIDUAL. SEEK MEDICAL ATTENTION IMMEDIATELY. KEEP THE AFFECTED INDIVIDUAL WARM AND AT REST.
<b>INJECTION:</b>	INJECTION OF PRESSURIZED HYDROCARBONS CAN CAUSE SEVERE, PERMANENT TISSUE DAMAGE. INITIAL SYMPTOMS MAY BE MINOR. INJECTION OF PETROLEUM HYDROCARBONS REQUIRES IMMEDIATE MEDICAL ATTENTION.

NA - NOT APPLICABLE

ND - NO DATA

NE - NOT ESTABLISHED

**5. FIRE FIGHTING MEASURES**

FLASH POINT, °C( °F): 116°C( 241°F)  
 FLAMMABLE LIMITS (% BY VOLUME): LOWER: ND UPPER: ND  
 EXTINGUISHING MEDIA: USE DRY CHEMICAL, FOAM, CARBON DIOXIDE OR WATER FOG.  
 SPECIAL FIRE FIGHTING PROCEDURES: N/A  
 AUTOIGNITION TEMPERATURE: N/A  
 EXPLOSION DATA: N/A  
 NFPA RATING: HEALTH: NE FLAMMABILITY: NE REACTIVITY: NE

**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 SPILL AS SOON AS POSSIBLE. IN NATURAL ENVIRONMENTS, SEEK CLEANUP ADVICE FROM SPECIALISTS TO MINIMIZE PHYSICAL HABITAT DAMAGE. THIS MATERIAL WILL FLOAT ON WATER. ABSORBENT PADS AND SIMILAR MATERIALS CAN BE USED. COMPLY WITH ALL LAWS AND REGULATIONS.

**7. HANDLING AND STORAGE**

**HANDLING PROCEDURES:** AVOID WATER CONTAMINATION AND EXTREME TEMPERATURES TO MINIMIZE PRODUCT DEGRADATION. 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.

**STORAGE PROCEDURES:** STORE IN COOL, DRY, WELL VENTILATED PLACE. DO NOT STORE WITH STRONG OXIDIZING AGENTS. DO NOT STORE AT TEMPERATURES ABOVE 120°F. COMPATIBLE MATERIALS FOR PACKAGING INCLUDE GLASS, CARBON STEEL, STAINLESS STEEL, EPOXY LINED STEEL. CONSULT APPROPRIATE FEDERAL, STATE AND LOCAL AUTHORITIES BEFORE REUSING, RECONDITIONING, RECLAIMING, RECYCLING OR DISPOSING OF EMPTY CONTAINERS OR WASTE RESIDUES OF THIS PRODUCT.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

<b>ENGINEERING CONTROLS:</b>	PROVIDE EXHAUST VENTILATION OR OTHER ENGINEERING CONTROLS TO KEEP THE AIRBORNE CONCENTRATIONS OF MISTS AND/OR VAPORS BELOW THE RECOMMENDED EXPOSURE LIMITS. AN EYE WASH STATION AND SAFETY SHOWER SHOULD BE LOCATED NEAR THE WORK-STATION.
<b>GLOVES PROTECTION:</b>	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.
<b>EYE PROTECTION:</b>	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 WASH WATER AVAILABLE.
<b>RESPIRATORY PROTECTION:</b>	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).
<b>CLOTHING RECOMMENDATION:</b>	USE CLEAN AND IMPERVIOUS PROTECTIVE CLOTHING (e.g., NEOPRENE OR TYVEK) IF SPLASHING OR SPRAYING CONDITIONS ARE PRESENT. PROTECTIVE CLOTHING MAY INCLUDE LONG-SLEEVE OUTER GARMENT, APRON, OR LAB COAT. IF SIGNIFICANT CONTACT OCCURS, REMOVE CONTAMINATED CLOTHING AS SOON AS POSSIBLE AND PROMPTLY SHOWER. LAUNDRY CONTAMINATED CLOTHING BEFORE REUSE OR DISCARD. WEAR HEAT PROTECTIVE BOOTS AND PROTECTIVE CLOTHING WHEN HANDLING MATERIAL AT ELEVATED TEMPERATURES.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>APPEARANCE:</b>	CLEAR, YELLOW LIQUID
<b>ODOR:</b>	MILD GLYCOL ETHER LIKE
<b>pH:</b>	(@ 25°C ) 9.5 (50 % IN ETHANOL/WATER)
<b>VAPOR PRESSURE, mm Hg (25 °C):</b>	ND
<b>VAPOR DENSITY:</b>	ND
<b>MELTING POINT:</b>	NOT AVAILABLE.
<b>BOILING POINT, 760 mm Hg, °C:</b>	> 245°C (> 470°F)
<b>SOLUBILITY IN WATER:</b>	COMPLETE
<b>SPECIFIC GRAVITY:</b>	1.08 (WATER = 1)
<b>EVAPORATION RATE:</b>	N/D
<b>BULK DENSITY</b>	8.99 LBS./GAL
<b>MOLECULAR WEIGHT:</b>	N/A
<b>PERCENT VOLATILE:</b>	NEGLIGIBLE VOLATILITY

**10. STABILITY AND REACTIVITY**

<b>STABILITY:</b>	MAY BE UNSTABLE IN TEMPERATURES > 450°F
<b>INCOMPATIBILITY:</b>	STRONG OXIDIZERS
<b>POLYMERIZATION:</b>	NOT EXPECTED TO OCCUR
<b>THERMAL DECOMPOSITION:</b>	MAY SLOWLY OCCUR IN TEMPERATURES > 450°F. HAZARDOUS DECOMPOSITION PRODUCTS INCLUDE CO <sub>2</sub> , CO, AND TRACE OXIDES OF NITROGEN

**11. TOXICOLOGICAL INFORMATION**

<b>EYE IRRITATION:</b>	THIS PRODUCT CAN CAUSE MILD, TRANSIENT, EYE IRRITATION WITH SHORT-TERM CONTACT WITH LIQUID OR SPRAYS.
<b>DERMAL IRRITATION:</b>	THIS MATERIAL CAN CAUSE MILD SKIN IRRITATION FROM PROLONGED OR REPEATED SKIN CONTACT.
<b>INHALATION TOXICITY:</b>	AT ELEVATED TEMPERATURES, MIST OR VAPORS MAY IRRITATE THE MUCOUS MEMBRANES OF THE NOSE, THE THROAT, BRONCHI, AND LUNGS.
<b>INGESTION IRRITATION:</b>	IF SWALLOWED, NO SIGNIFICANT ADVERSE HEALTH EFFECTS ARE ANTICIPATED. INGESTION CAN CAUSE MILD IRRITATION TO THE DIGESTIVE TRACT OR CAUSE A LAXATIVE EFFECT. BECAUSE OF THE LOW VISCOSITY OF THIS MATERIAL, THIS MATERIAL CAN ENTER THE LUNGS DIRECTLY BY ASPIRATION (e.g. DURING SWALLOWING OR VOMITING). IF ASPIRATED INTO THE LUNGS, THIS MATERIAL CAN CAUSE SEVERE LUNG DAMAGE OR DEATH.
<b>INJECTION SENSITATION:</b>	INJECTION UNDER THE SKIN, IN MUSCLE, OR INTO THE BLOOD STREAM CAN CAUSE IRRITATION, INFLAMMATION, SWELLING, FEVER, AND SYSTEMIC EFFECTS AND MILD CENTRAL NERVOUS SYSTEM DEPRESSION. INJECTION OF PRESSURIZED HYDROCARBONS CAN CAUSE SEVERE, PERMANENT TISSUE DAMAGE. INITIAL SYMPTOMS MAY BE MINOR. INJECTION OF PETROLEUM HYDROCARBONS REQUIRES IMMEDIATE MEDICAL ATTENTION.
<b>CHRONIC EXPOSURE SYMPTOMS</b>	THERE ARE NO KNOWN OR REPORTED EFFECTS FROM CHRONIC EXPOSURE EXCEPT FOR EFFECTS SIMILAR TO THOSE EXPERIENCED FROM SINGLE EXPOSURE.

**12. HEALTH INFORMATION**

HMIS CODE:            HEALTH:   1   FIRE:   1   REACTIVITY:   0  

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)**

<b>PROPER SHIPPING NAME:</b>	BRAKE FLUID
<b>HAZARD CLASS:</b>	NOT A DOT CONTROLLED MATERIAL (UNITED STATES).
<b>HAZARD IDENTIFICATION NUMBER:</b>	N/A
<b>DOT PLACARD:</b>	N/A
<b>COMPATIBILITY CATEGORY:</b>	N/A

**15. REGULATORY INFORMATION****SARA SECTION 313 - TOXIC CHEMICALS:**

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

**CHEMICALS LISTED ARE: GLYCOL EHTERS**

**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:

NO	<b>IMMEDIATE (ACUTE) HEALTH HAZARD</b>	NO	<b>SUDDEN RELEASE OF PRESSURE HAZARD</b>
NO	<b>DELAYED (CHRONIC) HEALTH HAZARD</b>	NO	<b>REACTIVE HAZARD</b>
NO	<b>FIRE HAZARD</b>		

**SARA SECTION 302 - EXTREMELY HAZARDOUS WASTE:**

This product is known to contain 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 crude oil and petroleum products 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 petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance.

**U.S. TSCA INVENTORY**

All components of this material are on the U.S. TSCA Inventory or are not required to be listed on the U.S. TSCA Inventory

**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 HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. AMALIE OIL CO. BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS.

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