



MATERIAL SAFETY DATA SHEET

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BRAKE FLUID DOT 3 PART NO. 56012

SECTION I – IDENTITY INFORMATION

Product Identity : DOT 3, Super Heavy Duty Brake Fluid
Chemical Name : Hydraulic Brake Fluid
Chemical Family : Glycol Ethers, Glycols, Polyglycols

SECTION II – HAZARDOUS INGREDIENTS

| <u>COMPONENT</u> | <u>CAS#</u> | <u>TLV (UNITS)</u> | <u>OTHER LIMITS</u> | <u>WGT%</u> |
|-------------------|-------------|--------------------|---------------------|-------------|
| Diethylene Glycol | 111-46-6 | 50 PPM | | 10-20 |

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point : 465⁰F
Vapor Pressure : Low
Evaporation Rate (Butyl Acetate=1) : Nil
Specific Gravity : 1.05
Vapor Density : N/A
Percent Volatile by Volume : N/A
Appearance and Odor : Clear, amber liquid, mild characteristic odor.

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method) : 290⁰F (COC)
Flammable Limits in Air % by Volume : Lower – 1.0% Upper – 6.0%
Extinguishing Media : Dry chemical, carbon dioxide, water fog, and water.
Unusual Fire and Explosion Hazard : None
Flash Point (Seta Flash) : >250⁰F(119⁰C)*
Flammable Limits in Air : Upper – N/D Lower – N/D**

*Flash Point of Ethylene Glycol is 247⁰F (119⁰C) by Seta Flash

**FL PF of Ethylene Glycol is 3.2%

Extinguishing Media : Dry chemical, CO₂, foam, water fog, and water spray.
Special Fire Fighting Procedures : Wear positive pressure, self-contained breathing apparatus.

Unusual Fire & Explosion Hazards : None expected under normal storage and handling conditions. However, Ethylene Glycol or solutions of Ethylene Glycol and water can form flammable vapors with air if heated sufficiently.

SECTION V – REACTIVITY DATA

Stability : Stable under normal storage conditions.
Conditions to Avoid : Ethylene Glycol will ignite in air at 775⁰F (413⁰C).
Incompatibility : Strong oxidizers, such as hydrogen peroxide, bromine, and chromic acid.
Hazardous Decomposition Products : On burning, carbon dioxide and carbon monoxide.
Hazardous Polymerization : Will not occur.
Conditions to Avoid : Open flame or very hot surfaces.

SECTION VI – HEALTH HAZARD DATA

Eye Contact : May cause severe eye irritation with moderate corneal injury. Vapors or mist may irritate eyes.
Skin Contact : Short single exposure may cause severe skin irritation.
Skin Absorption : A single prolonged exposure and/or repeated exposures may result in the material being absorbed in harmful amounts. The dermal LD50 has not been determined.
Ingestion : Single dose oral toxicity is moderate. Excessive exposure may cause central nervous system effects, cardiopulmonary effects. (metabolic acidosis), and kidney failure.
Inhalation : At room temperature, the vapors of the Glycol are minimal due to the low vapor pressure if heated, or sprayed as an aerosol, concentrations may be obtained that are sufficient to cause upper respiratory tract and lung irritation.

EMERGENCY AND FIRST AID PROCEDURES:

Eye Contact : Immediate and continuous irrigation with flowing water for at least 30 minutes is imperative. Prompt medical consultation is essential.
Skin Contact : In case of contact, immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician if irritation persists.
Inhalation : Remove to fresh air if effects occur. Consult a physician.

Ingestion

: If swallowed **Induce vomiting** immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN:

Early administration of Ethanol may counteract the toxic effect of Ethylene Glycol, metabolic acidosis, and renal damage. Hemodialysis or peritoneal dialysis has been of benefit. Supportive care treatment based on the judgment of the physician in response to reaction of the patient.

SECTION VII – SUPPLEMENTAL HEALTH INFORMATION

Systemic Effects

: Excessive exposure may cause irritation to upper respiratory tract. Observations in animals included kidney and liver effects and deposition of calcium salts in various tissues after long term dietary intake of ethylene glycol. Observations in animals include formation of bladder stones after repeated oral doses of Diethylene Glycol. Repeated excess skin exposure to formic acid may cause kidney effects.

Cancer Information

: Based on data from long term animal studies, Diethylene Glycol is not believed to pose a carcinogenic risk to man. Ethylene Glycol did not cause cancer in long-term animal studies.

Teratology (Birth Defects)

: Based on animal studies, ingestion of very large amounts of Ethylene Glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposure by inhalation or skin contact, the primary routes of occupation exposure, had minimal or essentially no effect on the fetus. Birth defects are unlikely from exposure to Diethylene Glycol. Exposures having no adverse effects on the mother should have no effects on the fetus.

Productive Effects

: Diethylene Glycol has not interfered with reproduction in animal studies. In studies on rats, Ethylene Glycol has been shown not to interfere with reproduction. In studies on mice, ingestion of large amounts caused a small decrease in the number of litters/pair, live pups/litter, and in live pup weight.

Mutagenicity

: Has been shown to be negative in some mutagenicity (test tube) tests and positive in others. Results of mutagenicity tests in animals have been negative.

SECTION VIII – CONTROL & PROTECTIVE MEASURES

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| Respiratory Protection | : Atmospheric levels should be maintained below the exposure guideline. When respirator protection is required for certain operations. Use an approved air-purifying respirator. |
| Skin Protection | : Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, aprons or full body suit will depend on operation. Remove contaminated clothing immediately. Wash exposed skin areas with soap and water, and launder clothing before reuse. Contaminated leather items, such as shoes, belts, or watch bands, should be discarded and destroyed. |
| Eye Protection | : Use chemical goggles. If vapor exposure causes discomfort, use a full-face respirator. |
| Ventilation | : Provide general and/or local exhaust ventilation to control airborne levels below the guidelines. |

SECTION IX – PRECAUTIONS FOR SAFE HANDLING & STORAGE

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| Steps to be Taken if Material is Spilled or Released | : Waste disposal methods, absorb residue with inert ingredient such as sand, earth, or vermiculite. Sweep up and dispose of according to Federal, State, and Local Regulations. |
| Other Precautions | : Keep away from feed and food products. Warning! Harmful or fatal if swallowed. |
| Precautions to be Taken: | : Eliminate ignition sources. Avoid eye or skin contact. Place leaking containers in well ventilated areas. If fire potential exists, blanket spill with foam or water spray. Clean up should be carried out according to Federal, State and Local Regulations. |

SECTION X – HAZARD COMMUNICATION CODES

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| NFPA CODES: | |
| Health | : 1 |
| Fire | : 1 |
| Reactivity | : 0 |

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Rev. 8/26/03