

Product Name: MOBIL BRAKE FLUID DOT 4
Revision Date: 28 Feb 2018
Issue Date: 26 Dec 2012

SDS Number:2026805XCN
Version:2.01

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL BRAKE FLUID DOT 4
Product Description: Glycol Ether
Product Code: 300936-89, 351010603010
Recommended Use: Brake fluid

COMPANY IDENTIFICATION

Supplier: ExxonMobil (China) Investment Co., Ltd.
17/F., Metro Tower
30 Tian Yao Qiao Road
Shanghai 200030 China

24 Hour Emergency Telephone	(+86) 0532-83889090
Supplier General Contact	(+86) 021-24076000
E-Mail	lubricants-sds@exxonmobil.com
FAX	400 1200 526

SECTION 2 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Physical State: Liquid **Colour:** Yellow-Orange **Odour:** Characteristic
H319: Causes serious eye irritation.

High-pressure injection under skin may cause serious damage. Ingestion may cause serious adverse effects and may be fatal. May cause kidney failure and central nervous system effects. Prolonged exposure to elevated concentrations of mist or liquid may cause irritation of the skin, eyes, and respiratory tract.

The hazard classification for this material is in accordance with the General Rules for Classification and Hazard Communication of Chemicals (GB 13690-2009).

CLASSIFICATION:

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Eye irritation: Category 2A.

LABEL:

Symbol:



Signal Word: Warning

Hazard Statements:

Health: H319: Causes serious eye irritation.

Precautionary Statements:

General: P101: If medical advice is needed, have product container or label at hand. P102: Keep out of reach of children. P103: Read label before use.

Prevention: P280: Wear protective gloves/protective clothing/eye protection/face protection. P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P260: Do not breathe mist / vapours. P264: Wash skin thoroughly after handling.

Response: P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P313: IF exposed or concerned: Get medical advice/attention. P314: Get medical advice/attention if you feel unwell. P337 + P313: If eye irritation persists: Get medical advice/attention.

Storage: P405: Store locked up.

Disposal: P501: Dispose of contents and container in accordance with local regulations.

Other hazard information:

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Ingestion may cause serious adverse effects and may be fatal. May cause kidney failure and central nervous system effects. Prolonged exposure to elevated concentrations of mist or liquid may cause irritation of the skin, eyes, and respiratory tract.

ENVIRONMENTAL HAZARDS

No significant hazards.

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NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
2-(2-METHOXYETHOXY)-ETHANOL	111-77-3	< 3%	H361 (D)
ETHANOL, 2, 2-OXYBIS-	111-46-6	5 - < 10%	H302, H373
ETHANOL, 2-(2-(2-BUTOXYETHOXY)ETHOXY)-	143-22-6	< 30%	H318
ETHANOL, 2-(2-BUTOXYETHOXY)-	112-34-5	1 - < 5%	H319 (2A)

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4 FIRST AID MEASURES

FIRST AID:

INHALATION

Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water for at least 15 minutes. Get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

IMPORTANT SYMPTOMS AND HEALTH EFFECTS

Eye pain, redness, tearing, swelling of eyelids, itching. Headache, dizziness, drowsiness, nausea

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and other CNS effects. Abdominal pain, diarrhea, low blood pressure and coma. Local necrosis as evidenced by delayed onset of pain and tissue damage a few hours after injection.

ADVICE TO PROTECT RESCUER

Please refer to Section 8 for personal protection information.

NOTE TO PHYSICIAN

This product contains ethylene glycol and/or diethylene glycol which, if ingested, are metabolized to toxic metabolites by the enzyme alcohol dehydrogenase, for which ethanol and 4-methylpyrazole {U.S. drug name Fomepizole, trade name Antizol} are antagonists. Administration of oral or intravenous ethanol or intravenous 4-methylpyrazole may arrest further metabolism of this material and thereby ameliorate the toxicity. Use of ethanol or 4-methylpyrazole does not affect toxic metabolites that are already present and is not a substitute for hemodialysis.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water or standard foam

SPECIAL HAZARD WHEN ON FIRE

In case of fire, see below for hazardous combustion products. Containers exposed to excessive heat from a fire may rupture.

FIRE FIGHTING INSTRUCTIONS AND PROTECTIVE MEASURES

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Incomplete combustion products, Oxides of carbon, Smoke, Fume

FLAMMABILITY PROPERTIES

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Flash Point [Method]: >100 C (212 F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do so without risk. Do not touch or walk through spilled material. Recover by pumping or with suitable absorbent. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Water Spill: Stop leak if you can do so without risk. Warn other shipping. This product emulsifies, disperses or is miscible in water. Remove material, as much as possible, using mechanical equipment.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid breathing mists or vapour. Prevent small spills and leakage to avoid slip hazard.

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Static Accumulator: This material is not a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit/Standard			Note	Source	Year
ETHANOL, 2,2-OXYBIS-		TWA	10 mg/m3			OARS WEEL	2016
ETHANOL, 2-(2-BUTOXYETHOXY)-	Inhalable fraction and vapour	TWA	10 ppm			ACGIH	2017

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Adequate ventilation should be provided so that exposure limits are not exceeded.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No protection is ordinarily required under normal conditions of use and with adequate ventilation. Particulate filter when appropriate.

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For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. Butyl, Polyvinyl Chloride (PVC)

Eye Protection: Chemical goggles are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:
Chemical/oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Colour: Yellow-Orange
Odour: Characteristic
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 20 C): 1.04
Flash Point [Method]: >100 C (212 F) [ASTM D-92]

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Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Flammability (Solid, Gas): N/A
Autoignition Temperature: N/D
Boiling Point / Range: > 260 C (500 F)
Vapour Density (Air = 1): N/D
Vapour Pressure: N/D
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Complete
Viscosity: 6.5 cSt (6.5 mm²/sec) at 40 C | >1.5 cSt (1.5 mm²/sec) at 100 C
Freezing Point: N/D
Melting Point: N/A
Decomposition Temperature: N/D
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidisers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

<u>Hazard Class</u>	<u>Conclusion / Remarks</u>
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapours, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
Ingestion	
Acute Toxicity: No end point data for material.	Slightly Toxic. Based on assessment of the components.
Skin	

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Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	Irritating and will injure eye tissue. Based on assessment of the components.
Sensitisation	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: No end point data for material.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Contains a substance that may be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children. Based on assessment of the components.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Contains a substance that may cause damage to organs from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

For the product itself:

Target Organs Repeated Exposure: Kidney

Contains:

DIETHYLENE GLYCOL (DEG): Orally, DEG is more toxic to humans than animal test data indicate. Probable lethal dose for an adult is about 50 ml (2 oz.), or 2 -3 swallows. Smaller amounts may cause kidney degeneration and failure. Benign urinary bladder tumours were observed in rats, no tumours were observed in mice. DIETHYLENE GLYCOL MONOMETHYL ETHER: Oral maternal exposure of animals resulted in teratogenicity. Dermal maternal exposure of animals resulted in slight toxicity to the fetus. GLYCOL ETHERS: Some glycol ethers cause adverse effects in animals that include the reproductive system, offspring, blood, kidney and liver. MONO- AND DI-ETHYLENE GLYCOLS: Oral exposure may produce kidney damage.

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The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS

3 = IARC 1
4 = IARC 2A

5 = IARC 2B
6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Material -- Potential to bioaccumulate is low.

MOBILITY

Material -- Expected to remain in water or migrate through soil.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

NATIONAL CATALOGUE OF HAZARDOUS WASTES

HW40 - Ethers Wastes

DISPOSAL RECOMMENDATIONS

Even though this product is readily biodegradable, it must not be indiscriminately discarded into the environment. Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of

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undesirable combustion products. Dispose of empty container as normal refuse.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

China List of Dangerous Goods (GB 12268 - 2012) : Not Regulated for Land Transport

INTERNATIONAL CLASSIFICATION FOR TRANSPORT

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport
, EHS

SECTION 15 REGULATORY INFORMATION

The hazard classification for this material is in accordance with the General Rules for Classification and Hazard Communication of Chemicals (GB 13690-2009).

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

The General Rules for preparation of precautionary label for Chemicals (GB 15258-2009):
Regulated

Law of the People's Republic of China on Prevention and Control of Environmental Pollution by Solid Waste: See Disposal Considerations section.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, KECI, PICCS, TCSI, TSCA

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

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KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):

- H302: Harmful if swallowed; Acute Tox Oral, Cat 4
- H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1
- H319(2A): Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2A
- H361(D): Suspected of damaging the unborn child; Repro Tox, Cat 2 (Develop)
- H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Layout Reformatted with SDS compilation requirements.

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