



MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: Dot 4 Brake Fluid

Product No.: FC120838 FC120838C FC120839 FC120839C

Manufacturer Name:
Federal-Mogul World Headquarters
26555 Northwestern Highway
Southfield, Michigan 48033

Emergency Telephone:
24hr EP (INFOTRAC): 1-800-535-5053
International: (001) 352-323-3500

Non-emergency Telephone:
1-248-354-9844

Intended Use: Brake Fluid

Contact Person:
MSDS Request (voicemail) 1-248-354-9844

2 HAZARDS IDENTIFICATION

Emergency Overview

Physical State: Liquid

Color: Yellow

Odor: Characteristic

WARNING!

Causes severe skin and eye irritation. May be harmful if swallowed.

Potential Health Effects

Inhalation: May cause slight respiratory tract irritation.

Eye Contact: Severely irritating to eyes. Exposed individuals may experience eye tearing, redness, and discomfort.

Skin Contact: Severely irritating to skin. Exposure may cause redness, itching and inflammation.

Ingestion: May be harmful if swallowed. May cause central nervous system depression.

Chronic Health Effects: May cause central nervous system depression. May cause damage to the liver and kidneys.

Target Organ(s): | Eye | Kidney | Liver | Skin | Central nervous system.

OSHA Regulatory Status: This product is hazardous according to OSHA 29CFR 1910.1200.

Environment: The environmental hazard of the product is considered to be limited.

3	COMPOSITION / INFORMATION ON INGREDIENTS
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Chemical Name	CAS-No.	Concentration*
Borate ester	Trade Secret	30 - 50%
†Triethylene glycol ethyl ether	112-50-5	30 - 40%
†Triethylene glycol methyl ether	112-35-6	10 - 20%
†Triethylene glycol monobutyl ether	143-22-6	10 - 20%
Corrosion inhibitor	Trade Secret	1 - 5%
Glycols	Mixture	0 - 5%

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

† This chemical is hazardous according to OSHA/WHMIS criteria.

4	FIRST AID MEASURES
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Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.

Ingestion: Rinse mouth thoroughly. Drink plenty of water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Get medical attention.

5	FIRE-FIGHTING MEASURES
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Extinguishing Media: Water spray, dry powder or carbon dioxide.

Unsuitable Extinguishing Media: None.

Special Fire Fighting Procedures: Use standard firefighting procedures and consider the hazards of other involved materials.

Unusual Fire & Explosion Hazards: None known.

Protective Measures: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Flammability Class: NFPA Rating Fire = 1.

6	ACCIDENTAL RELEASE MEASURES
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Personal Precautions: Avoid contact with skin and eyes. See Section 8 of the MSDS for Personal Protective Equipment.

Spill Cleanup Methods: Absorb spillage with non-combustible, absorbent material. Collect in containers and seal securely.

Environmental Precautions: Avoid discharge into drains, water courses or onto the ground.

Notification Procedures: Inform authorities if large amounts are involved.

7 HANDLING AND STORAGE

Handling: All handling to take place in well-ventilated area. Avoid contact with eyes, skin, and clothing. Do not eat, drink or smoke when using the product. Wash thoroughly after handling.

Storage: Store in a cool and well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits: No exposure limits noted for ingredient(s).

Engineering Controls: Provide adequate ventilation. Provide easy access to water supply and eye wash facilities.

Respiratory Protection: Respiratory protection must be used if air contamination exceeds acceptable level. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Use a NIOSH-approved respirator (See 29 CFR 1910.134, respiratory protection standard).
Respirator type: High-efficiency particulate respirator.

Eye Protection: Wear approved safety goggles.

Hand Protection: Wear chemical-resistant gloves. Contact glove manufacturer for specific information.

Skin Protection: Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene Measures: Do not eat, drink or smoke when using the product. 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.

Environmental Exposure Controls: Environmental manager must be informed of all major spillages.

9 PHYSICAL AND CHEMICAL PROPERTIES

Color: Yellow

Odor: Characteristic

Odor Threshold: No data available.

Physical State: Liquid

pH: 8 - 11.5

Melting Point: No data available.

Freezing Point: No data available.

Boiling Point: 249°C (480°F)

Flash Point: >135°C (275°F)
Evaporation Rate: <0.01 (Butyl acetate=1)
Flammability Limit - Upper (%): No data available.
Flammability Limit - Lower (%): No data available.
Vapor Pressure: No data available.
Vapor Density (Air=1): > 1
Specific Gravity: 1 - 1.07
Solubility in Water: Soluble
Solubility (Other): No data available.
Partition Coefficient (n-Octanol/water): No data available.
Autoignition Temperature: No data available.
Decomposition Temperature: No data available.
Volatile Organic Compounds (VOC): No data available.
Viscosity: No data available.

10	STABILITY AND REACTIVITY
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Stability: This product is stable under expected conditions of use.

Conditions to Avoid: Avoid exposure to high temperatures or direct sunlight.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products: No data available.

Possibility of Hazardous Reactions: Will not occur.

11	TOXICOLOGICAL INFORMATION
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Specified Substance(s)

Acute Toxicity:

Chemical Name	Test Results
Triethylene glycol monobutyl ether	Dermal LD50 (Rabbit): 3540 mg/kg
Triethylene glycol monobutyl ether	Oral LD50 (Rat): 5300 mg/kg
Triethylene glycol methyl ether	Oral LD50 (Rat): 11300 mg/kg

Listed Carcinogens: None.

Product Information

Acute Toxicity:

Test Results: No test data available for the product.

Other Acute: Causes severe skin and eye irritation. May be harmful if swallowed.

Chronic Toxicity: May cause damage to the liver and kidneys. May cause central nervous system depression.

12	ECOLOGICAL INFORMATION
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Ecotoxicity: The environmental hazard of the product is considered to be limited.

Mobility: No data available.

Persistence and Degradability: No data available.

Bioaccumulation Potential: No data available.

Other Adverse Effects: No data available.

13	DISPOSAL CONSIDERATIONS
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General Information: Dispose in accordance with applicable federal, state, and local regulations.

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

Container: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14	TRANSPORT INFORMATION
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DOT Not regulated.

TDG Not regulated.

IATA Not regulated.

IMDG Not regulated.

15	REGULATORY INFORMATION
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Canadian Controlled Products Regulations: This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

WHMIS Classification: D2B

Mexican Dangerous Statement: This product is dangerous according to Mexican regulations.

Inventory Status: All ingredients are either listed or exempt from listing on EINECS, DSL or TSCA.

US Regulations

CERCLA Hazardous Substance List (40 CFR 302.4): Not regulated.

SARA Title III

Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A): Not regulated.

Section 311/312 (40 CFR 370):

Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

Section 313 Toxic Release Inventory (40 CFR 372):

Chemical Name	CAS-No.	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Triethylene glycol methyl ether	112-35-6	10000 lbs	25000 lbs
Triethylene glycol monobutyl ether	143-22-6	10000 lbs	25000 lbs
Triethylene glycol ethyl ether	112-50-5	10000 lbs	25000 lbs

For reporting purposes: the De Minimis Concentration for a toxic chemical in a mixture is 0.1% for carcinogens as defined in 29 CFR 1910.1200(d)(4) or 1% for others.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

Not regulated.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): Not regulated.

Drug Enforcement Act: Not regulated.

TSCA

TSCA Section 4(a) Final Test Rules & Testing Consent Orders: Not regulated.

TSCA Section 5(a)(2) Final Significant New Use Rules (SNURs) (40CFR 721, Subpt. E): Not regulated.

TSCA Section 5(e) PMN-Substance Consent Orders: Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D): Not regulated.

State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): Not regulated.

Massachusetts Right-To-Know List: Not regulated.

Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act (Act. 451 of 1994)): Not regulated.

Minnesota Hazardous Substances List: Not regulated.

New Jersey Right-To-Know List: Triethylene glycol ethyl ether; Triethylene glycol methyl ether; Triethylene glycol monobutyl ether

Pennsylvania Right-To-Know List: Triethylene glycol ethyl ether; Triethylene glycol methyl ether; Triethylene glycol monobutyl ether

Rhode Island Right-To-Know List: Not regulated.

16	OTHER INFORMATION
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HAZARD RATINGS

	Health Hazard	Fire Hazard	Instability	Special Hazard
NFPA	2	1	0	0

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

NFPA Label colored diamond code: Blue - Health; Red - Flammability; Yellow - Instability; White - Special Hazards

	Health Hazard	Flammability	Physical Hazard	Personal Protection
HMIS	2*	1	0	C

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe * - Chronic Health Effect

Personal Protection codes: C - Safety Glasses, Gloves, Apron

HMIS Label colored bar code: Blue - Health; Red - Flammability; Orange - Physical Hazards; White - Special

This MSDS contains revisions in the following section(s): 2, 9, 11, 16.

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Disclaimer: The information provided on this data sheet was abstracted from supplier material safety data sheets and standard references in occupational health and toxicology. Federal-Mogul makes no representation or warranty with respect to the information obtained from such references. The information is however, as of the date provided, true and accurate to the best of Federal-Mogul's knowledge, and should be used to make an independent determination of the methods to safeguard workers and the environment.