



MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: Dot 5.1 Brake Fluid

Product No.: FC133300 FC133300C FC133301 FC133301C

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: Mild

CAUTION!

May cause skin and eye irritation.

Potential Health Effects

Inhalation: May cause slight respiratory tract irritation.

Eye Contact: May cause eye irritation.

Skin Contact: May cause skin irritation.

Ingestion: May cause discomfort if swallowed.

Target Organ(s): | Eye | Skin |

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

Chemical Name	CAS-No.	Concentration*
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†Triethylene glycol monomethyl ether borate ester	30989-05-0	40 - < 70%
†Triethylene glycol methyl ether	112-35-6	15 - < 40%
†2-Aminoethanol	141-43-5	0.1 - < 1%

* 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

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

Eye Contact: Flush thoroughly with water for at least 15 minutes. Make sure to remove any contact lenses from the eyes before rinsing. Get medical attention.

Skin Contact: Remove contaminated clothes and rinse skin thoroughly with water. Get medical attention.

Ingestion: Rinse mouth thoroughly. Seek medical attention.

5 FIRE-FIGHTING MEASURES

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.

Hazardous Combustion Products: Boric acid, Carbon Dioxide, Carbon Monoxide

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

Flammability Class: NFPA Rating Fire = 1. Materials that must be preheated before ignition can occur.

6 ACCIDENTAL RELEASE MEASURES

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
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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
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Exposure Limits:

Chemical Name	Source	Type	Exposure Limits	Notes
2-Aminoethanol	US. ACGIH TLV	TWA	3 ppm	
2-Aminoethanol	US. ACGIH TLV	STEL	6 ppm	
2-Aminoethanol	US. NIOSH Guide	IDLH	30 ppm	
2-Aminoethanol	US. OSHA Z-1 PEL	TWA	6 mg/m ³ 3 ppm	
Triethylene glycol monomethyl ether borate ester (Inhalable fraction.)	US. ACGIH TLV	STEL	6 mg/m ³	
Triethylene glycol monomethyl ether borate ester (Inhalable fraction.)	US. ACGIH TLV	TWA	2 mg/m ³	

Consult Canadian Provincial Regulations and/or Mexican Regulations on exposure limits, if applicable.

Engineering Controls: Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist.

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: Gloves are recommended for prolonged use.

Skin Protection: Wear apron or protective clothing in case of contact.

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.

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

9	PHYSICAL AND CHEMICAL PROPERTIES
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Color: Yellow

Odor: Mild

Odor Threshold: No data available.
Physical State: Liquid
pH: 7.2 (Approximate)
Melting Point: No data available.
Freezing Point: -50°C (-58°F)
Boiling Point: 265°C (509°F) - 300°C (572°F)
Flash Point: >115°C (239°F)
Evaporation Rate: No data available.
Flammability Limit - Upper (%): No data available.
Flammability Limit - Lower (%): No data available.
Vapor Pressure: No data available.
Vapor Density (Air=1): > 1
Specific Gravity: 1.06 - 1.07
Solubility in Water: Miscible with water.
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: 817 mm²/sec @40°C

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
2-Aminoethanol	Dermal LD50 (Rabbit): 1 ml/kg
2-Aminoethanol	Oral LD50 (Rat): 1720 mg/kg
Triethylene glycol methyl ether	Dermal LD50 (Rabbit): 7100 mg/kg
Triethylene glycol methyl ether	Oral LD50 (Rat): 11300 mg/kg

Listed Carcinogens:

Chemical Name	IARC	NTP	OSHA	ACGIH
Triethylene glycol monomethyl ether borate ester	Not Listed	Not Listed	Not Listed	A4

IARC: 1 = Carcinogenic to Humans; 2A = Probably Carcinogenic to Humans; 2B = Possibly Carcinogenic to Humans; 3 = Not classifiable as to carcinogenicity to humans; 4 = Probably not carcinogenic to humans; Not listed = Not evaluated by IARC.

ACGIH: A1 = Confirmed Human Carcinogen; A2 = Suspected Human Carcinogen; A3 = Confirmed Animal Carcinogen;

A4 = Not classifiable as a human carcinogen; A5 = Not suspected to be a human carcinogen; Not listed = Not evaluated by ACGIH.

Product Information

Acute Toxicity:

Test Results: No test data available for the product.

Oral LD50 (Rat): 11800 mg/kg

Dermal LD50 (Rabbit): 7400-10500 mg/kg

Other Acute: May cause skin and eye irritation.

Chronic Toxicity: No additional adverse health effects noted.

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

Product

EC50 (Alga): >100 mg/l

LC50 (Fish): >100 mg/l

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

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: Not classified.

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):**

Chemical Name	RQ
Triethylene glycol methyl ether	-

- : No reportable quantity.

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): Not regulated.

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: 2-Aminoethanol

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

Minnesota Hazardous Substances List: 2-Aminoethanol

New Jersey Right-To-Know List: 2-Aminoethanol; Triethylene glycol methyl ether

Pennsylvania Right-To-Know List: 2-Aminoethanol; Triethylene glycol methyl ether

Rhode Island Right-To-Know List: 2-Aminoethanol

16	OTHER INFORMATION
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HAZARD RATINGS

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

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

Personal Protection codes: B - Safety Glasses, Gloves

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, 15, 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.