

1. Identification

Product identifier Dot 5.1 Brake Fluid

Other means of identification

Product code FC133300, FC133300C, FC133301, FC133301C

Recommended use Brake fluid.

Recommended restrictions None known.

Manufacturer / Importer / Supplier / Distributor information

Manufacturer/Supplier Federal-Mogul World Headquarters
26555 Northwestern Highway
Southfield, Michigan 48033
USA

Contact person: msds.request@federalmogul.com

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

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

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2B

OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Causes skin irritation. Causes eye irritation.

Precautionary statement

Prevention Wash thoroughly after handling. Wear protective gloves.

Response If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage Store away from incompatible materials.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) Not classified.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Triethylene glycol monomethyl ether borate ester	30989-05-0	40 - <70
Triethylene glycol methyl ether	112-35-6	15 - <40

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

4. First-aid measures

Inhalation Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

Skin contact	Remove contaminated clothes and rinse skin thoroughly with water. Get medical attention if irritation develops or persists.
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.
Ingestion	Rinse mouth thoroughly. Get medical attention if any discomfort continues.
Most important symptoms/effects, acute and delayed	Exposed individuals may experience eye tearing, redness, and discomfort.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water spray, dry powder or carbon dioxide.
Unsuitable extinguishing media	Water jet.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire-fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials. Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid contact with skin and eyes. Wear suitable protective clothing. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Remove sources of ignition. 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.

7. Handling and storage

Precautions for safe handling	Avoid contact with skin and eyes. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use Personal Protective Equipment recommended in section 8 of the SDS.
Conditions for safe storage, including any incompatibilities	Keep container in a well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Triethylene glycol monomethyl ether borate ester (CAS 30989-05-0)	STEL	6 mg/m ³	Inhalable fraction.
	TWA	2 mg/m ³	Inhalable fraction.

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. Provide easy access to water supply and eye wash facilities.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Chemical goggles and face shield are recommended.
Skin protection	
Hand protection	Chemical resistant gloves. Butyl rubber gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
Other	Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection	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 29 CFR 1910.134. Respirator type: High-efficiency particulate respirator.
Thermal hazards	When material is heated, wear gloves to protect against thermal burns.
General hygiene considerations	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.

9. Physical and chemical properties

Appearance	Yellow liquid.
Physical state	Liquid.
Form	Liquid.
Color	Yellow.
Odor	Mild.
Odor threshold	Not available.
pH	7.2 Approximate.
Melting point/freezing point	-58 °F (-50 °C)
Initial boiling point and boiling range	509 - 572 °F (265 - 300 °C)
Flash point	> 239.0 °F (> 115.0 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	> 1 (Air = 1)
Relative density	1.06 - 1.07
Solubility(ies)	Miscible with water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	817 mm ² /s (40°C)

10. Stability and reactivity

Reactivity	The product is stable and non reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal temperature conditions. Glycol Ethers can form peroxides on storage – do not distil to dryness.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Avoid exposure to high temperatures or direct sunlight.
Incompatible materials	Strong oxidizing agents. Strong bases.
Hazardous decomposition products	Carbon dioxide. Carbon monoxide. Boric acid.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May cause discomfort if swallowed.
Inhalation	Glycol does not easily form a vapour at normal temperatures. Therefore, it must be heated or misted before inhalation exposure can occur.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Exposed individuals may experience eye tearing, redness, and discomfort.

Information on toxicological effects

Acute toxicity May cause discomfort if swallowed.

Components	Species	Test Results
Triethylene glycol methyl ether (CAS 112-35-6)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	7100 mg/kg
<i>Oral</i>		
LD50	Rat	11300 mg/kg
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes eye irritation.	
Respiratory sensitization	No data available.	
Skin sensitization	Not a skin sensitizer.	
Germ cell mutagenicity	No data available.	
Carcinogenicity	No data available.	
Reproductive toxicity	No data available.	
Specific target organ toxicity - single exposure	No data available.	
Specific target organ toxicity - repeated exposure	No data available.	
Aspiration hazard	No data available.	
Further information	Glycol Ethers: Some glycol ethers cause adverse effects in animals that include the reproductive system, offspring, blood, kidney and liver. Organic solvents may be absorbed into the body by inhalation and cause permanent damage to the nervous system, including the brain.	

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species		Test Results
Dot 5.1 Brake Fluid (CAS Mixture)			
Aquatic			
Algae	EC50	Algae	> 100 mg/l, 48 hours
Fish	LC50	Fish	> 100 mg/l, 96 hours
Persistence and degradability	No data available.		
Bioaccumulative potential	No data available on bioaccumulation.		
Mobility in soil	No data available.		
Mobility in general	The product is water soluble and may spread in water systems.		
Other adverse effects	No data available.		

13. Disposal considerations

Disposal instructions	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.
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Waste codes should be assigned by the user based on the application for which the product was used.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information**DOT**

Not regulated as a hazardous material by DOT.

IATA

Not regulated as a dangerous good.

IMDG

Not regulated as a dangerous good.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is hazardous according to OSHA 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Triethylene glycol methyl ether (CAS 112-35-6) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical Yes

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Triethylene glycol methyl ether (CAS 112-35-6)

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

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

US state regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Triethylene glycol methyl ether (CAS 112-35-6) 500 lbs

US. Pennsylvania RTK - Hazardous Substances

Triethylene glycol methyl ether (CAS 112-35-6)

US. Rhode Island RTK

Triethylene glycol methyl ether (CAS 112-35-6)

US. California Proposition 65**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

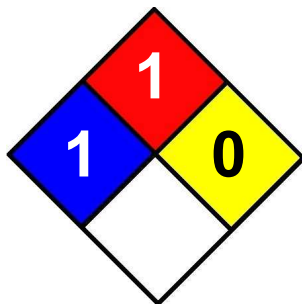
16. Other information, including date of preparation or last revision

Issue date 08-August-2013

Revision date -

Version # 01

NFPA Ratings



References

HSDB® - Hazardous Substances Data Bank
Registry of Toxic Effects of Chemical Substances (RTECS)

Disclaimer

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