

## 1. Identification

**Product identifier** DOT 4 LV High Performance Motor Vehicle Brake Fluid

**Other means of identification**

**FIR No.** 187151

**Recommended use** DOT 4 LV Class 6 Motor Vehicle Brake Fluid

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Company Name** Ford Motor Company

**Address** Attention: SDS Information, P.O. Box 1899

Dearborn, Michigan 48121

USA

**Telephone** 1-800-392-3673

**SDS Information** 1-800-448-2063 (USA and Canada)

fordsds.com

**Emergency telephone numbers**

Poison Control Center: USA and Canada: 1-800-959-3673

INFOTRAC (Transportation): USA and Canada 1-800-535-5053

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards** Reproductive toxicity (the unborn child) Category 2

**Environmental hazards** Not classified.

**OSHA defined hazards** Not classified.

**Label elements**



**Signal word** Warning

**Hazard statement** Suspected of damaging the unborn child.

**Precautionary statement**

**Prevention** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection.

**Response** If exposed or concerned: Get medical advice/attention.

**Storage** Store locked up.

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

**Hazard(s) not otherwise classified (HNOC)** May irritate eyes and skin. May cause irritation of respiratory tract. May be harmful if swallowed.

**Supplemental information** None.

## 3. Composition/information on ingredients

**Mixtures**

Chemical name	Common name and synonyms	CAS number	%
Triethylene glycol monobutyl ether		143-22-6	3.5
1,1'-IMINODIPROPAN-2-OL		110-97-4	1.5
2-(2-Methoxyethoxy)ethanol		111-77-3	< 2
3,6,9,12-Tetraoxahexadecan-1-ol		1559-34-8	1.5

## 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Rinse with water. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	Direct contact with eyes may cause temporary irritation.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Foam. Powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed. Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	Move containers from fire area if you can do so without risk.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Avoid contact with eyes, skin, and clothing. Avoid breathing mist or vapor. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Wear appropriate protective equipment and clothing during clean-up. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	This product is miscible in water.  Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.  Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.  Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Pregnant or breastfeeding women must not handle this product. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with eyes, skin, and clothing. Avoid breathing mist or vapor. Provide adequate ventilation. Should be handled in closed systems, if possible. Observe good industrial hygiene practices. Wear appropriate personal protective equipment. For personal protection, see Section 8 of the SDS.
<b>Conditions for safe storage, including any incompatibilities</b>	Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

<b>Occupational exposure limits</b>	No exposure limits noted for ingredient(s).
<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).

<b>Appropriate engineering controls</b>	Use adequate ventilation to control airborne concentrations below the exposure limits/guidelines. If user operations generate a vapor, dust and/or mist, use process enclosure, appropriate local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits/guidelines.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin protection</b>	
<b>Hand protection</b>	Suitable chemical protective gloves should be worn when the potential exists for skin exposure. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Nitrile, butyl rubber or neoprene gloves are recommended.
<b>Other</b>	Wear appropriate chemical resistant clothing if applicable.
<b>Respiratory protection</b>	If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of OSHA Respiratory Protection Standard 29 CFR 1910.134 and/or Canadian Standard CSA Z94.4.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Observe any medical surveillance requirements. 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

<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Yellow.

**Odor** Characteristic.

**Odor threshold** Not available.

**pH** 7 - 8.5

**Melting point/freezing point** < -58 °F (< -50 °C) DIN ISO 2016

**Initial boiling point and boiling range** 509 °F (265 °C) ASTM D1120

**Flash point** 275.9 °F (135.5 °C) DIN EN 22719; ISO 2719

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not applicable.

### Upper/lower flammability or explosive limits

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** 1 mbar @ 20 and 50 °C

**Vapor density** Not available.

**Relative density** Not available.

### Solubility(ies)

**Solubility (water)** Soluble

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** > 392 °F (> 200 °C) DIN EN 14522

**Decomposition temperature** Not available.

**Viscosity** Not available.

### Other information

**Density** 1.06 g/cm<sup>3</sup> @ 20 °C

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	May cause irritation to the respiratory system.
<b>Skin contact</b>	Prolonged skin contact may cause temporary irritation.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion</b>	May be harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics** Direct contact with eyes may cause temporary irritation.

### Information on toxicological effects

#### Acute toxicity

Components	Species	Calculated/Test Results
1,1'-IMINODIPROPAN-2-OL (CAS 110-97-4)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	8000 mg/kg
<b>Oral</b>		
LD50	Guinea pig	2800 mg/kg
	Mouse	2120 mg/kg
	Rabbit	4700 mg/kg
	Rat	4765 mg/kg
<b>Other</b>		
LD50	Mouse	96 mg/kg
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	20000 mg/kg
		6540 mg/kg
<b>Oral</b>		
LD50	Guinea pig	4160 mg/kg
		4.16 g/kg
	Mouse	8222 mg/kg
	Rabbit	7.19 g/kg
	Rat	6310 mg/kg
		5500 mg/kg
<b>Other</b>		
LD50	Mouse	5600 mg/kg
		2611 mg/kg
	Rat	3000 mg/kg
		2722 mg/kg

Components	Species	Calculated/Test Results
Triethylene glycol monobutyl ether (CAS 143-22-6)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	3.54 ml/kg
<b>Oral</b>		
LD50	Rat	5300 mg/kg
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.	
<b>Serious eye damage/eye irritation</b>	Direct contact with eyes may cause temporary irritation.	
<b>Respiratory or skin sensitization</b>		
<b>Respiratory sensitization</b>	Based on available data, the classification criteria are not met.	
<b>Skin sensitization</b>	Based on available data, the classification criteria are not met.	
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met.	
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
Not listed.		
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)</b>		
Not listed.		
<b>Reproductive toxicity</b>	Suspected of damaging the unborn child.	
<b>Specific target organ toxicity - single exposure</b>	Based on available data, the classification criteria are not met.	
<b>Specific target organ toxicity - repeated exposure</b>	Based on available data, the classification criteria are not met.	
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met.	
<b>Chronic effects</b>	Prolonged inhalation may be harmful.	

## 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.

### Ecotoxicity

Components	Species	Calculated/Test Results
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)		
<b>Aquatic</b>		
Fish	LC50 Bluegill ( <i>Lepomis macrochirus</i> )	7500 mg/l, 96 hours
<b>Persistence and degradability</b>	No data is available on the degradability of any ingredients in the mixture.	
<b>Bioaccumulative potential</b>		
<b>Partition coefficient n-octanol / water (log Kow)</b>		
1,1'-IMINODIPROPAN-2-OL		-0.82
<b>Mobility in soil</b>	No data available. This product is miscible in water and may not disperse in soil.	
<b>Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.	

## 13. Disposal considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging**

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**14. Transport information****DOT**

Not regulated as dangerous goods.

**IATA**

Not regulated as dangerous goods.

**IMDG**

Not regulated as dangerous goods.

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

**15. Regulatory information**

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Toxic Substances Control Act (TSCA)****TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

2-(2-(2-Methoxyethoxy)ethoxy)ethanol (CAS 112-35-6) Listed.

2-(2-Methoxyethoxy)ethanol (CAS 111-77-3) Listed.

Triethylene glycol monobutyl ether (CAS 143-22-6) Listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)****SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Reproductive toxicity

**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
2-(2-(2-Methoxyethoxy)ethoxy)ethanol	112-35-6	24 - < 26
2-(2-Methoxyethoxy)ethanol	111-77-3	< 2
Triethylene glycol monobutyl ether	143-22-6	3.5

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

2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)

Triethylene glycol monobutyl ether (CAS 143-22-6)

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

Not regulated.

**Safe Drinking Water Act (SDWA)** Contains component(s) regulated under the Safe Drinking Water Act.

**US state regulations****California Proposition 65**

**WARNING:** This product can expose you to chemicals including ETHYLENE OXIDE, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**California Proposition 65 - CRT: Listed date/Carcinogenic substance**

ETHYLENE OXIDE (CAS 75-21-8)

Listed: July 1, 1987

**California Proposition 65 - CRT: Listed date/Developmental toxin**

ETHYLENE OXIDE (CAS 75-21-8)

Listed: August 7, 2009

**California Proposition 65 - CRT: Listed date/Female reproductive toxin**

ETHYLENE OXIDE (CAS 75-21-8)

Listed: February 27, 1987

**California Proposition 65 - CRT: Listed date/Male reproductive toxin**

ETHYLENE OXIDE (CAS 75-21-8)

Listed: August 7, 2009

**International Inventories**

All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

**16. Other information, including date of preparation or last revision****Issue date** 11-13-2019**Version** 01**HMIS® ratings** Health: 2  
Flammability: 1  
Physical hazard: 0**NFPA ratings** Health: 2  
Flammability: 1  
Instability: 0**Preparation Information and Disclaimer**

This document was prepared by FCSD-Toxicology, Ford Motor Company, Fairlane Business Park IV, 17225 Federal Drive, Allen Park, MI 48101, USA, based in part on information provided by the manufacturer. The information on this data sheet represents our current data and is accurate to the best of our knowledge as to the proper handling of this product under normal conditions and in accordance with the application specified on the packaging and/or technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user. To the extent that there are any differences between this product's Safety Data Sheet (SDS) and the consumer packaged product labels, the SDS should be followed.

**Part number(s)** PM-20