

## 1. Identification

**Product identifier** **Dot 3 – Premium Brake Fluid**

**Other means of identification**

**Product code** H-130 (21-b)

**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 1  
Reproductive toxicity Category 2

**OSHA defined hazards** Not classified.

### Label elements



**Signal word** Danger

**Hazard statement** Causes serious eye damage. Causes skin irritation. Suspected of damaging fertility or the unborn child.

**Precautionary statement**

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

**Response** If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. 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 exposed or concerned: Get medical advice/attention. 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)** Not classified.

## 3. Composition/information on ingredients

### Mixtures

Chemical name	CAS number	%
Triethylene glycol monobutyl ether	143-22-6	25-29
Diethylene glycol	111-46-6	16-20
Polyethylene glycol hexylether	112-59-4	11-15

2-(2-Butoxyethoxy)-ethanol	112-34-5	10-14
Triethylene glycol methyl ether	112-35-6	7-11
Polyethylene glycol	25322-68-3	4-8
Diethylene glycol monoethyl ether	111-90-0	3-6
2-(2-propoxyethoxy)ethanol	6881-94-3	2-6
Triethylene glycol ethyl ether	112-50-5	2-6
Triethylene glycol	112-27-6	1-5
2-(2-Methoxyethoxy)ethanol	111-77-3	<5
Ethylene glycol	107-21-1	<5

**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. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes.

**Ingestion** Rinse mouth thoroughly with water and give large amounts of milk or water, if person is conscious. Only induce vomiting at the instruction of medical personnel. Get medical attention if any discomfort continues.

**Most important symptoms/effects, acute and delayed** Exposed individuals may experience eye tearing, redness, and discomfort. Defats the skin.

**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. Pregnant women should not work with the product, if there is the least risk of exposure.

**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
2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5)	STEL	10 ppm	Inhalable fraction and vapor.
Ethylene glycol (CAS 107-21-1)	Ceiling	100 mg/m3	Aerosol.

#### US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
Diethylene glycol monoethyl ether (CAS 111-90-0)	TWA	140 mg/m3	
		25 ppm	
Diethylene glycol (CAS 111-46-6)	TWA	10 mg/m3	
Polyethylene glycol (CAS 25322-68-3)	TWA	10 mg/m3	Particulate.
Triethylene glycol (CAS 112-27-6)	TWA	10 mg/m3	Particulate.

### 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. Observe any medical surveillance requirements.

## 9. Physical and chemical properties

### Appearance

Light amber liquid.

#### Physical state

Liquid.

#### Form

Liquid.

#### Color

Light amber.

### Odor

Mild.

### Odor threshold

Not available.

### pH

9.5 - 10.5

### Melting point/freezing point

Not available.

### Initial boiling point and boiling range

> 401 °F (> 205 °C)

### Flash point

Not available.

### 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.

<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	1.028 - 1.036 (20°C)
<b>Solubility(ies)</b>	Soluble in water.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.

## 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>	Stable under normal temperature conditions. Glycol Ethers can form peroxides on storage – do not distil to dryness.
<b>Possibility of hazardous reactions</b>	Will not occur.
<b>Conditions to avoid</b>	Avoid exposure to high temperatures or direct sunlight.
<b>Incompatible materials</b>	Strong oxidizing agents. Strong bases.
<b>Hazardous decomposition products</b>	Carbon dioxide. Carbon monoxide.

## 11. Toxicological information

### Information on likely routes of exposure

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

**Symptoms related to the physical, chemical and toxicological characteristics** Exposed individuals may experience eye tearing, redness, and discomfort. Defats the skin.

### Information on toxicological effects

**Acute toxicity** May cause discomfort if swallowed.

Components	Species	Test Results
2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	2700 mg/kg
<i>Oral</i>		
LD50	Rat	4500 mg/kg
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	6540 mg/kg
<i>Oral</i>		
LD50	Rat	5500 mg/kg
Diethylene glycol monoethyl ether (CAS 111-90-0)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	8476 mg/kg
<i>Oral</i>		
LD50	Rat	5.54 g/kg
Ethylene glycol (CAS 107-21-1)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	9530 mg/kg

Components	Species	Test Results
<i>Oral</i> LD50	Rat	4700 mg/kg
Polyethylene glycol hexylether (CAS 112-59-4)		
<b>Acute</b>		
<i>Dermal</i> LD50	Rabbit	1500 mg/kg
<i>Oral</i> LD50	Rat	3.73 ml/kg
Triethylene glycol (CAS 112-27-6)		
<b>Acute</b>		
<i>Dermal</i> LD50	Rabbit	22460 mg/kg
<i>Oral</i> LD50	Rat	15000 - 22000 mg/kg
Triethylene glycol ethyl ether (CAS 112-50-5)		
<b>Acute</b>		
<i>Dermal</i> LD50	Rabbit	8200 mg/kg
<i>Oral</i> LD50	Rat	10600 mg/kg
Triethylene glycol methyl ether (CAS 112-35-6)		
<b>Acute</b>		
<i>Dermal</i> LD50	Rabbit	7100 mg/kg
<i>Oral</i> LD50	Rat	11300 mg/kg
Triethylene glycol monobutyl ether (CAS 143-22-6)		
<b>Acute</b>		
<i>Dermal</i> LD50	Rabbit	3.54 ml/kg
<i>Oral</i> LD50	Rat	5300 mg/kg
<b>Skin corrosion/irritation</b>	Causes skin irritation.	
<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.	
<b>Respiratory sensitization</b>	No data available.	
<b>Skin sensitization</b>	Not a skin sensitizer.	
<b>Germ cell mutagenicity</b>	No data available.	
<b>Carcinogenicity</b>	No data available.	
<b>Reproductive toxicity</b>	Suspected of damaging fertility or the unborn child.	
<b>Specific target organ toxicity - single exposure</b>	No data available.	
<b>Specific target organ toxicity - repeated exposure</b>	No data available.	
<b>Aspiration hazard</b>	No data available.	
<b>Further information</b>	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.	
<b>12. Ecological information</b>		
<b>Ecotoxicity</b>	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.	

Components	Species	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
Diethylene glycol monoethyl ether (CAS 111-90-0)		
<b>Aquatic</b>		
Fish	LC50	Bluegill ( <i>Lepomis macrochirus</i> )
		> 10000 mg/l, 96 hours
Ethylene glycol (CAS 107-21-1)		
<b>Aquatic</b>		
Fish	LC50	Fathead minnow ( <i>Pimephales promelas</i> )
		8050 mg/l, 96 hours
Polyethylene glycol (CAS 25322-68-3)		
<b>Aquatic</b>		
Fish	LC50	Atlantic salmon ( <i>Salmo salar</i> )
		> 1000 mg/l, 96 hours
Triethylene glycol (CAS 112-27-6)		
<b>Aquatic</b>		
Fish	LC50	Bluegill ( <i>Lepomis macrochirus</i> )
		> 10000 mg/l, 96 hours

**Persistence and degradability** Expected to be inherently biodegradable. Expected to be readily biodegradable.

**Bioaccumulative potential** Potential to bioaccumulate is low.

**Partition coefficient n-octanol / water (log Kow)**

Diethylene glycol monoethyl ether (CAS 111-90-0)	-0.54
Ethylene glycol (CAS 107-21-1)	-1.36
2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5)	0.56
Polyethylene glycol hexylether (CAS 112-59-4)	1.7

**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)**

2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5)	LISTED
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)	LISTED
Diethylene glycol monoethyl ether (CAS 111-90-0)	LISTED

Ethylene glycol (CAS 107-21-1)	LISTED
Polyethylene glycol hexylether (CAS 112-59-4)	LISTED
Triethylene glycol ethyl ether (CAS 112-50-5)	LISTED
Triethylene glycol methyl ether (CAS 112-35-6)	LISTED
Triethylene glycol monobutyl ether (CAS 143-22-6)	LISTED

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories** Immediate Hazard - Yes  
 Delayed Hazard - Yes  
 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

2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5)  
 2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)  
 Diethylene glycol monoethyl ether (CAS 111-90-0)  
 Ethylene glycol (CAS 107-21-1)  
 Polyethylene glycol hexylether (CAS 112-59-4)  
 Triethylene glycol ethyl ether (CAS 112-50-5)  
 Triethylene glycol methyl ether (CAS 112-35-6)  
 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)** 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.

##### US. Massachusetts RTK - Substance List

2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)  
 Ethylene glycol (CAS 107-21-1)

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

2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5)	500 lbs
2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)	500 lbs
Diethylene glycol monoethyl ether (CAS 111-90-0)	500 lbs
Ethylene glycol (CAS 107-21-1)	500 lbs
Polyethylene glycol hexylether (CAS 112-59-4)	500 lbs
Triethylene glycol ethyl ether (CAS 112-50-5)	500 lbs
Triethylene glycol methyl ether (CAS 112-35-6)	500 lbs
Triethylene glycol monobutyl ether (CAS 143-22-6)	500 lbs

##### US. Pennsylvania RTK - Hazardous Substances

2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5)  
 2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)  
 Diethylene glycol (CAS 111-46-6)  
 Diethylene glycol monoethyl ether (CAS 111-90-0)  
 Ethylene glycol (CAS 107-21-1)  
 Polyethylene glycol hexylether (CAS 112-59-4)  
 Triethylene glycol (CAS 112-27-6)  
 Triethylene glycol ethyl ether (CAS 112-50-5)  
 Triethylene glycol methyl ether (CAS 112-35-6)  
 Triethylene glycol monobutyl ether (CAS 143-22-6)

##### US. Rhode Island RTK

2-(2-Butoxyethoxy)-ethanol (CAS 112-34-5)  
 2-(2-Methoxyethoxy)ethanol (CAS 111-77-3)  
 Diethylene glycol monoethyl ether (CAS 111-90-0)  
 Ethylene glycol (CAS 107-21-1)  
 Polyethylene glycol hexylether (CAS 112-59-4)  
 Triethylene glycol ethyl ether (CAS 112-50-5)  
 Triethylene glycol methyl ether (CAS 112-35-6)  
 Triethylene glycol monobutyl ether (CAS 143-22-6)

## 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
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).

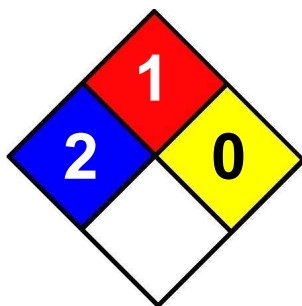
#### 16. Other information, including date of preparation or last revision

**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

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.