

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name: BRAKE FLUID DOT 3

Other means of identification

Common Name: 10032
UN/ID No Not Regulated
Synonyms Mixture of glycol ethers; Polyglycols, Glycols
Product Categories Brake Fluid

Recommended use of the chemical and restrictions on use

Sale and Use Restrictions Not applicable
Recommended Use Restricted to professional users.
Uses advised against Consumer use

Details of the supplier of the safety data sheet

Supplier Address
 ACEL, LLC.
 6826 Hill Park Dr. Suite #100
 Lorton, VA 22079

Emergency telephone number

Company Phone Number ACEL, LLC. (888) 801-2507
Emergency Telephone CHEMTREC 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification


Acute toxicity - Oral	Category 4
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (repeated exposure)	Category 2

Label elements

Emergency Overview

Danger

Hazard statements
 Harmful if swallowed
 Causes serious eye damage
 May cause damage to organs through prolonged or repeated exposure



Appearance Solution, Glycol Ether **Physical state** Liquid **Odor** Mild

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Wear protective gloves/protective clothing/eye protection/face protection
 Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

Get medical advice/attention if you feel unwell

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 CONTROL CENTER or doctor/physician
 IF SWALLOWED: Call a POISON CONTROL CENTER or doctor/physician if you feel unwell
 Rinse mouth

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other information**

5 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms

Mixture of glycol ethers; Polyglycols, Glycols.

Components	CAS Number	Weight %	Trade Secret
Triethylene Glycol Monobutyl Ether	143-22-6	23-35	*
Triethylene Glycol Monoethyl Ether	112-50-5	8-20	*
Diethylene glycol	111-46-6	10-20	*
3,6,9,12-Tetraoxahexadecan-1-ol	1559-34-8	9-14	*
Triethylene Glycol Monomethyl Ether	112-35-6	3-10	*
Tetraethylene Glycol	112-60-7	6-10	*
Diethylene Glycol Monobutyl Ether	112-34-5	1-8	*
3,6,9,12,15,18-Hexaoxaeicosane	23601-39-0	2-5	*
Polyethylene Glycol Monomethyl Ether	9004-74-4	0-4	*
Diethylene Glycol Monoethyl Ether	111-90-0	0-2	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures**Skin contact**

Immediately flush skin with plenty of water for at least 15 (30 or 60) minutes. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. Thoroughly clean shoes before reuse.

Inhalation

Move to fresh air. If breathing is labored, administer oxygen. If not breathing, give artificial respiration. Seek immediate medical attention/advice.

Eye contact

Immediately flush eyes for at least 15 minutes. Get medical attention.

Ingestion

CALL A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. DO NOT INDUCE VOMITING UNLESS DIRECTED TO DO SO BY A PHYSICIAN. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

Notes to Physician

Treat for Diethylene Glycol poisoning.

Most important symptoms and effects, both acute and delayed**Symptoms**

Eye irritation, Skin irritation, Dizziness, Drowsiness, Nausea, Impairment of vision.

Indication of any immediate medical attention and special treatment needed

Self-protection of the first aider No action shall be taken involving any personal risk without suitable training. It may be dangerous to the person providing first aid to give mouth-to-mouth resuscitation.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

Use dry chemical, CO₂, water spray (fog) or alcohol resistant foam.

Small Fire Alcohol resistant foam, Dry chemical or CO₂; Carbon dioxide (CO₂).

Large Fire Water spray or fog; Alcohol resistant foam.

Explosive properties: Explosive when mixed with oxidizing substances. Fire or intense heat may cause violent rupture of packages.

Specific hazards arising from the chemical

COMBUSTIBLE MATERIAL. In the event of fire and/or explosion do not breathe fumes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.

Hazardous combustion products Carbon monoxide, Carbon dioxide (CO₂).

Specific methods:

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge May be ignited by heat, sparks or flames.

Special firefighting procedures:

Combustible liquid. Keep away from heat, sparks and flame. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. If protective equipment is not available or not used, fight fire from a protected location or safe distance. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions: Isolate area. Keep unnecessary and unprotected personnel away. Contaminated surfaces will be extremely slippery. Do not touch or walk through spilled material. Use spark-proof tools and explosion-proof equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin and eyes. Use personal protective equipment. See Section 8 for information on appropriate personal protective equipment.

For emergency responders Use personal protection recommended in Section 8. Ventilate the area. Remove all sources of ignition.

Environmental precautions

Environmental precautions: Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Water runoff can cause environmental damage. Prevent from entering into soil, ditches, sewers, waterways or groundwater. Avoid subsoil penetration. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so. Dike far ahead of spill; use dry sand to contain the flow of material. Prevent from entering into soil, ditches, sewers, waterways or

groundwater.

Methods for clean-up: Clean-up methods - small spillage: Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to state, local, federal regulations. Clean-up methods - large spillage: Dike to collect large liquid spills. Pump into suitable and properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Keep product and empty container away from heat and sources of ignition. Protect from physical damage. Keep away from any incompatible materials (See Section 10). Empty containers retain product residue and can be hazardous. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Conditions for safe storage, including any incompatibilities

Technical measures/precautions: Eye wash and safety shower should be easily accessible. Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Materials to avoid: Oxidizing agents, Strong acids, Strong bases, Acids, Zinc, Light and/or alkaline metals; Acid chlorides, Acid anhydrides, Mineral oils.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Components	ACGIH TLV	OSHA Exposure Limits:	NIOSH IDLH
Triethylene Glycol Monobutyl Ether 143-22-6	-	Not established	-
Triethylene Glycol Monoethyl Ether 112-50-5	-	Not established	-
Diethylene glycol 111-46-6	-	Na	-
3,6,9,12-Tetraoxahexadecan-1-ol 1559-34-8	-	Na	-
Triethylene Glycol Monomethyl Ether 112-35-6	-	Not established	-
Tetraethylene Glycol 112-60-7	-	Not established	-
Diethylene Glycol Monobutyl Ether 112-34-5	TWA: 10 ppm inhalable fraction and vapor	Not established	-
3,6,9,12,15,18-Hexaoxaicosane 23601-39-0	-	Na	-
Polyethylene Glycol Monomethyl Ether 9004-74-4	-	Not established	-
Diethylene Glycol Monoethyl Ether 111-90-0	-	Not established	-

Other information WEEL (Workplace Environmental Limit) 8 hr TWA AIHA: Diethylene Glycol = 10 mg/m³; Diethylene Glycol Monoethyl Ether = 25 ppm; Diethylene Glycol Monobutyl Ether = 25 ppm, Polypropylene Glycol = 10 mg/m³.

Appropriate engineering controls

Engineering measures: Eye wash and safety shower should be easily accessible. Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles). If splashes are likely to occur, wear: Face protection shield.
Skin and body protection	Wear normal work clothing, Chemical resistant gloves. Recommended Use: Butyl rubber, Nitrile, Ethyl vinyl alcohol laminate (EVAL). Examples of acceptable glove barrier materials include: Natural rubber, Nitrile, Neoprene, Vinyl. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact: (consult with the specific manufacturer to confirm performance).
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators : Organic vapor cartridge with a particulate pre-filter. A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. Wear suitable gloves and eye/face protection. Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Wash face, hands and any exposed skin thoroughly after handling. Take off contaminated clothing and wash it before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Mild
Appearance	Solution, Glycol Ether	Odor threshold	No information available
Color	Yellow to Light yellow		
Property	Values	Remarks • Method	
pH	10.6	50/50 ETHOH	
Melting point/freezing point	<= -47.22 °C / -53 °F		
Boiling point / boiling range	232 °C / 450 °F	@760 mm Hg	
Flash point	121 °C / 249 °F	Pensky-Martens Closed Cup (PMCC)	
Evaporation rate		No Data Available	
Flammability (solid, gas)	No information available	OSHA/NFPA Class IIIB Combustible Liquid	
Flammability Limits in Air			
Upper flammability limit	No Data Available		
Lower flammability limit	No Data Available		
Vapor pressure	No Data Available		
Vapor density	Heavier than air		
Specific Gravity	1.03	@ 20° C	
Water solubility	Soluble in water		
Solubility in other solvents	No Data Available		
Partition coefficient	No Data Available		
Autoignition temperature	310 °C / 590 °F		
Decomposition temperature	No Data Available		
Kinematic viscosity	2 mm ² /s	@ 100 °C	
Dynamic viscosity	No Data Available		
Explosive properties	No Data Available		
Oxidizing properties	No Data Available		

Other information

Softening point No Data Available
 Molecular weight No Data Available
 VOC Content (%) No Data Available
 VOC Content (%) No Data Available
 Density 1.03 g/cc
 Bulk density No Data Available

10. STABILITY AND REACTIVITY

Reactivity

Reactivity Stable under normal conditions. Hygroscopic.

Chemical stability

Possibility of Hazardous Reactions Reacts with oxidizing agents. May form peroxides of unknown stability.
Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

Heat, flames and sparks. Product can oxidize at elevated temperatures. Do not distill to dryness. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible materials

Materials to avoid: Oxidizing agents, Strong acids, Strong bases, Acids, Zinc, Light and/or alkaline metals; Acid chlorides, Acid anhydrides, Mineral oils.

Hazardous Decomposition Products

Hazardous Decomposition Products Carbon monoxide, Carbon dioxide (CO₂), Nitrogen oxides (NO_x).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information Harmful if swallowed. Causes serious eye damage. May cause damage to organs through prolonged or repeated exposure.

Inhalation Not an expected route of exposure: Mist may cause irritation of upper respiratory tract (nose and throat).

Eye contact Causes serious eye damage. May cause pain, redness, stinging and tearing. May cause moderate corneal injury.

Skin Contact Repeated or prolonged contact may cause slight skin irritation. May be harmful if absorbed through skin.

Ingestion Harmful if swallowed: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Oral toxicity is expected to be moderate in humans due to Diethylene glycol (CAS#111-46-6), even though tests with animals show a lower degree of toxicity. Ingestion of quantities (approximately 65 ml (2 oz.) for Diethylene glycol or 100 ml (3 oz.) for ethylene glycol) has caused death in humans. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure.

Components	Oral LD50	Dermal LD50	Inhalation LC50
Triethylene Glycol Monobutyl Ether 143-22-6	= 5300 mg/kg (Rat)	= 3480 mg/kg (Rabbit)	-
Triethylene Glycol Monoethyl Ether 112-50-5	-	-	-
Diethylene glycol 111-46-6	= 12565 mg/kg (Rat)	= 11890 mg/kg (Rabbit)	-
3,6,9,12-Tetraoxahexadecan-1-ol	= 5175 mg/kg (Rat)	> 4000 mg/kg (Rat)	-

1559-34-8			
Triethylene Glycol Monomethyl Ether 112-35-6	= 11800 mg/kg (Rat)	= 7400 mg/kg (Rabbit)	-
Tetraethylene Glycol 112-60-7	=32484 mg/kg (Rat)	> 20 g/kg (Rabbit)	-
Diethylene Glycol Monobutyl Ether 112-34-5	= 5660 mg/kg (Rat)	= 2700 mg/kg (Rabbit)	-
3,6,9,12,15,18-Hexaoxaicosane 23601-39-0	Oral	-	-
Polyethylene Glycol Monomethyl Ether 9004-74-4	=39800 mg/kg (Rat)	>20000 mg/kg (Rabbit)	-
Diethylene Glycol Monoethyl Ether 111-90-0	= 1920 mg/kg (Rat)	=9143 mg/kg (rabbit)	> 200 mg/l (Rat) 4 h

Information on toxicological effects

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	Skin Sensitization: Not expected. Respiratory Sensitization: Not classified.
Mutagenic effects:	No data available to indicate product or any components present at or greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by IARC, NTP, or OSHA.
Reproductive toxicity	Contains component(s) which have been shown to interfere with reproduction in animal studies, (CAS#111-46-6) Diethylene Glycol: Did not interfere with reproduction in animal studies except in very high doses.
Teratogenicity	Diethylene glycol has caused toxicity to the fetus and some birth defects at maternally toxic, high doses in animals. Other animal studies have not reproduced birth defects even at much higher doses that caused severe maternal toxicity. Triethylene glycol did not cause birth defects in animals; reduced fetal body weight effects were seen only at very high doses.
STOT - single exposure	Not classified.
STOT - repeated exposure	Category 2, If swallowed: May cause damage to organs through prolonged or repeated exposure; Kidney, Gastrointestinal tract (GI). Prolonged skin contact may defat the skin and produce dermatitis.
Chronic toxicity	No information available.
Subchronic toxicity	Kidney, Eyes, Skin, Reproductive System, Liver.
Target Organ Effects	Excessive exposure may cause central nervous system effects.
Neurological effects	Based on human evidence: (CAS#112-34-5) Diethylene Glycol Monobutyl ether, (CAS#9004-77-7) Polyethylene Glycol Monobutyl Ether; Stomach irregularities; (CAS#111-46-6) Diethylene Glycol, Liver irregularities.
Other adverse effects	
Aspiration hazard	This material, if ingested or vomited can cause lung injury.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity	5 % of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .	
ATEmix (oral)	1794 mg/kg
ATEmix (dermal)	5347 mg/kg
ATEmix (inhalation-vapor)	262000 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

28.99 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Components	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Triethylene Glycol Monobutyl Ether 143-22-6	500: 72 h Desmodesmus subspicatus mg/L EC50	2400: 96 h Pimephales promelas mg/L LC50 static 2400: 96 h Pimephales promelas mg/L LC50		500: 48 h Daphnia magna mg/L EC50
Diethylene glycol 111-46-6		75200: 96 h Pimephales promelas mg/L LC50		84000: 48 h Daphnia magna mg/L EC50

		flow-through	
3,6,9,12-Tetraoxahexadecan-1-ol 1559-34-8	1000: 96 h Pseudokirchneriella subcapitata mg/L EC50	1000: 96 h Salmo gairdneri mg/L LC50	1000: 48 h Daphnia magna mg/L EC50
Triethylene Glycol Monomethyl Ether 112-35-6	500: 72 h Desmodesmus subspicatus mg/L EC50	5000: 96 h Brachydanio rerio mg/L LC50 static 10000: 96 h Pimephales promelas mg/L LC50 static	500: 48 h Daphnia magna mg/L EC50
Tetraethylene Glycol 112-60-7	1000: 96 h Pseudokirchneriella subcapitata mg/L EC50	1000: 96 h Oncorhynchus mykiss mg/L LC50 static	1000: 48 h Daphnia magna mg/L EC50
Diethylene Glycol Monobutyl Ether 112-34-5	100: 96 h Desmodesmus subspicatus mg/L EC50	1300: 96 h Lepomis macrochirus mg/L LC50 static	100: 48 h Daphnia magna mg/L EC50
Diethylene Glycol Monoethyl Ether 111-90-0		10000: 96 h Lepomis macrochirus mg/L LC50 static 19100 - 23900: 96 h Lepomis macrochirus mg/L LC50 flow-through 11400 - 15700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 11600 - 16700: 96 h Pimephales promelas mg/L LC50 flow-through	3940 - 4670: 48 h Daphnia magna mg/L EC50

Persistence and degradability

This product contains components which may be persistent in the environment.

Bioaccumulation

Not expected.

Mobility

Soluble in water.

Components	Partition coefficient
Triethylene Glycol Monobutyl Ether 143-22-6	0.51
Diethylene glycol 111-46-6	-1.98
Triethylene Glycol Monomethyl Ether 112-35-6	-1.12
Diethylene Glycol Monobutyl Ether 112-34-5	1
Diethylene Glycol Monoethyl Ether 111-90-0	-0.8

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Dispose of in accordance with federal, state and local regulations.

Contaminated packaging Do not reuse container. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT Not regulated

IATA Not regulated

IMDG

Not regulated

15. REGULATORY INFORMATION**International Inventories****Legend:**

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Components	CAS Number	Weight %	SARA 313 - Threshold Values %
Triethylene Glycol Monobutyl Ether 143-22-6	143-22-6	23-35	1.0 % de minimis concentration
Triethylene Glycol Monoethyl Ether 112-50-5	112-50-5	8-20	1.0 % de minimis concentration
Triethylene Glycol Monomethyl Ether 112-35-6	112-35-6	3-10	1.0 % de minimis concentration
Diethylene Glycol Monobutyl Ether 112-34-5	112-34-5	1-8	1.0 % de minimis concentration
Diethylene Glycol Monoethyl Ether 111-90-0	111-90-0	0-2	1.0 % de minimis concentration

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

State Regulations (RTK)**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION**NFPA Rating**

Health hazards 2

Flammability 1

Instability 0

Physical and Chemical Properties -

HMIS Rating

Health hazards 2*

Flammability 1

Physical hazards 0

Personal protection B

Chronic Hazard Star Legend

** = Chronic Health Hazard*

Prepared by

Environmental Health and Safety Department

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Revision Date

04-13-2017

Revision Note

Formula. The Emergency Overview has changed. SEE SECTION 2. This data sheet contains changes from the previous version in section(s): 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15, 16.

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet