Safety Data Sheet

Issue Date: 14-Oct-2011 **Revision Date:** 11-May-2015 **Version** 1

1. IDENTIFICATION

Product Identifier

Product Name DOT-4 BRAKE FLUID

Other means of identification

SDS # 7777-033

Product Code 6412

Recommended use of the chemical and restrictions on use

Recommended Use Brake fluid.

Details of the supplier of the safety data sheet

Supplier Address

PETRA OIL COMPANY
6100 WEST by NORTHWEST BLVD STE190
Houston, TX 77040

Emergency Telephone Number

Emergency Telephone (24 hr) CHEMTREC 1-800-424-9300

2. HAZARDS IDENTIFICATION

Appearance Clear yellow to amber liquid **Physical State** Liquid **Odor** Mild

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Serious eye damage/eye irritation	Category 1
Reproductive toxicity	Category 2

Signal Word

Danger

Hazard Statements

Harmful if swallowed
Harmful in contact with skin
Causes serious eye damage
Suspected of damaging fertility or the unborn child

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product

Precautionary Statements - Response
If exposed or concerned: Get medical advice/attention
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 or doctor/physician
IF ON SKIN: Wash with plenty of soap and water
Wash contaminated clothing before reuse
Call a poison center or doctor/physician if you feel unwell
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Unknown Acute Toxicity
20% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Glycol ethers	Proprietary	0-100
Glycols	Proprietary	0-100
Borate ester	Proprietary	0-100

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Call a poison center or doctor/physician if you feel unwell.

Inhalation If symptomatic, move to fresh air. Seek immediate medical attention if irritation, nausea, dizziness or unconsciousness occurs.

Ingestion Get medical attention if irritation occurs.

Most important symptoms and effects

Symptoms Causes serious eye damage. May cause mild skin irritation. Inhalation may cause mild respiratory irritation. May cause discomfort if swallowed.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Carbon dioxide (CO2). Dry chemical. Foam. Water spray (fog).

Unsuitable Extinguishing Media Water jet.

Specific Hazards Arising from the Chemical
Not determined.

Hazardous Combustion Products Smoke, fumes or vapors, and oxides of carbon. Various unidentified organic compounds.

Sensitivity to Mechanical Impact Not impact sensitive.
Sensitivity to Static Discharge Not sensitive.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required.

Other Information Immediately contact emergency personnel.

Environmental Precautions In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. The National Response Center (NRC) can be reached at 1-800-424-8802. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Small spill: Cover with a non-combustible material and remove to approved disposal container. For large spills, dike far ahead of spill for later disposal. Prevent runoff to storm sewers and ditches leading to natural waterways. Collect using an inert absorbent material and place in appropriate containers for disposal.

Methods for Clean-Up Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8. Avoid breathing vapors or mists. Use only with adequate ventilation. Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a cool, well-ventilated place. Store away from incompatible materials. Store locked up. Store away from heat, sparks, flame.

Incompatible Materials Acids. Bases. Oxidizers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Glycol ether	TWA: 10 ppm inhalable fraction and vapor	-	-

Appropriate engineering controls

Engineering Controls Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/Face Protection No special technical protective measures are necessary. Use chemical safety goggles if contact is likely.

Skin and Body Protection No special technical protective measures are necessary. Avoid contact with skin.

Respiratory Protection No protection is ordinarily required under normal conditions of use and with adequate ventilation.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash face, hands and any exposed skin thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid		
Appearance	Clear yellow to amber liquid	**Odor**	Mild
Color	Clear yellow to amber	**Odor Threshold**	Not determined

Property	Values	Remarks • Method
pH	8.0-11.5	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	248 °C / 480 °F	
Flash Point	> 135 °C / > 275 °F	CC (closed cup)
Evaporation Rate	< 0.01	(butyl acetate = 1)
Flammability (Solid, Gas)	Liquid-not applicable	
Upper Flammability Limits	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	Not determined	
Vapor Density	>1	(Air=1)
Specific Gravity	1.000-1.070	@ 4°C (1=Water)
Water Solubility	Soluble in water	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	

Dynamic Viscosity	Not determined
Explosive Properties	Not determined
Oxidizing Properties	Not determined

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid
See Sec. 7 Handling & Storage.

Incompatible Materials
Acids. Bases. Oxidizers.

Hazardous Decomposition Products
Smoke, fumes or vapors, and oxides of carbon. Unidentified organic compounds.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes serious eye damage.

Skin Contact Harmful in contact with skin.

Inhalation Avoid breathing vapors or mists.

Ingestion Harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Glycol ether	= 11300 µL/kg (Rat)	= 7100 µL/kg (Rabbit)	-
Glycol ether	= 7750 mg/kg (Rat)	= 8 mL/kg (Rabbit)	-
Glycol ether	= 5300 mg/kg (Rat)	= 3480 mg/kg (Rabbit)	-
Glycol ether	= 5175 mg/kg (Rat)	> 4000 mg/kg (Rat)	-
Glycol ether	> 2000 mg/kg (Rat)	-	-
Glycol	= 28 g/kg (Rat)	> 20 mL/kg (Rabbit) > 20 g/kg (Rabbit)	-
Glycol ether	= 12300 µL/kg (Rat)	> 20 mL/kg (Rabbit) = 14100 µL/kg (Rabbit)	= 147 mg/m^3 (Rat) 4 h
Glycol ether	= 3384 mg/kg (Rat)	= 2700 mg/kg (Rabbit)	-
Glycols	= 12565 mg/kg (Rat)	= 11890 mg/kg (Rabbit)	-

Glycol ether	= 4 mL/kg (Rat)	= 650 mg/kg (Rabbit) = 2500 µL/kg (Rabbit)	-
Glycol ether	= 1920 mg/kg (Rat)	= 6 mL/kg (Rat) = 4200 µL/kg (Rabbit)	> 5240 mg/m^3 (Rat) 4 h

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

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

Carcinogenicity Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Numerical measures of toxicity
Not determined

Unknown Acute Toxicity 20% of the mixture consists of ingredient(s) of unknown toxicity.

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.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Glycol ether	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 10000: 96 h Leuciscus idus mg/L LC50 static		500: 48 h Daphnia magna mg/L EC50
Glycol ether	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 2200 - 4600: 96 h Leuciscus idus mg/L LC50 static		500: 48 h Daphnia magna mg/L EC50
Glycol ether	1000: 96 h Pseudokirchneriella subcapitata mg/L EC50	1000: 96 h Salmo gairdneri mg/L LC50		1000: 48 h Daphnia magna mg/L EC50
Glycol ether		10000: 96 h Brachydanio rerio mg/L LC50		
Glycol		5000: 24 h Carassius auratus mg/L LC50		
Glycol ether	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 2850: 24 h Daphnia magna mg/L EC50
Glycols		75200: 96 h Pimephales promelas mg/L LC50 flow-through	EC50 = 29228 mg/L 15 min	84000: 48 h Daphnia magna mg/L EC50
Glycol ether	500: 72 h Desmodesmus subspicatus mg/L EC50	7500: 96 h Lepomis macrochirus mg/L LC50 static 7500: 96 h Lepomis macrochirus mg/L LC50 5741: 96 h Pimephales promelas mg/L LC50	EC50 > 10000 mg/L 17 h	500: 48 h Daphnia magna mg/L EC50

Glycol ether		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 13400: 96 h Salmo gairdneri mg/L LC50 flow-through		3940 - 4670: 48 h Daphnia magna mg/L EC50

Persistence/Degradability
Not determined.

Bioaccumulation
Not determined.

Mobility

Chemical Name	Partition Coefficient
Glycol ether	1.13
Glycol ether	0.51
Glycol ether	-0.6
Glycols	-1.98
Glycol ether	-0.682
Glycol ether	-0.8

Other Adverse Effects
Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT Not regulated

IATA Not regulated

IMDG Not regulated

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Glycol ether	Present	X		Present		Present	X	Present	X	X
Glycols	Present	X		Present		Present	X	Present	X	X
Borate ester	Present	X		Present			X	Present	X	X

Legend:

TSCA *- United States Toxic Substances Control Act Section 8(b) Inventory*

DSL/NDSL *- Canadian Domestic Substances List/Non-Domestic Substances List*

EINECS/ELINCS *- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

ENCS *- Japan Existing and New Chemical Substances*

IECSC *- China Inventory of Existing Chemical Substances*

KECL *- Korean Existing and Evaluated Chemical Substances*

PICCS *- Philippines Inventory of Chemicals and Chemical Substances*

AICS *- Australian Inventory of Chemical Substances*

US Federal Regulations

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

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

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Glycol ether -		5-50	1.0
Glycol ether -		5-50	1.0
Glycol ether -		0-100	1.0
Glycol ether -		0-100	1.0
Glycol ether -		<5	1.0
Glycol ether -		<5	1.0

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Glycol ether	X		X
Glycol ether	X		X
Glycol ethers	X		X
Glycol ethers	X		X
Glycols			X
Glycol ether	X	X	X
Glycol ether	X		X

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	1	1	0	Not determined
HMIS	**Health Hazards**	**Flammability**	**Physical Hazards**	**Personal Protection**
	1	1	0	Not determined

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Disclaimer

The information provided in this 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