Conforms to ANSI Z400.1-2004 Standard (United States, Canada).

Material Safety Data Sheet

Series 500 High Performance DOT 3 Brake Fluid

Section 1. Product and company identification

Product name
Series 500 High Performance DOT 3 Brake Fluid

Material uses
Brake fluids.

Supplier/Manufacturer
AMSOIL INC.
925 Tower Avenue
Superior, WI 54880

Code
BF3

MSDS authored by
AMSOIL INC.

In case of emergency
CHEMTREC: (800) 424-9300

Section 2. Hazards identification

Emergency overview

Color	:	Colorless to Brown.
Physical state	:	Liquid. [Fluid.]
Odor	:	Mild.
Signal word	:	WARNING!
Hazard statements	:	HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT AND EYE IRRITATION. MAY CAUSE SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.
Precautions	:	Do not breathe vapor or mist. Do not get in eyes. Avoid contact with skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects

Inhalation	:	Harmful by inhalation. Irritating to respiratory system.
Ingestion	:	No known significant effects or critical hazards.
Skin	:	Slightly irritating to the skin.
Eyes	:	Severely irritating to eyes. Risk of serious damage to eyes.

Potential chronic health effects

Chronic effects	:	Contains material that can cause target organ damage.
Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	No known significant effects or critical hazards.
Teratogenicity	:	No known significant effects or critical hazards.
Developmental effects	:	No known significant effects or critical hazards.
Fertility effects	:	No known significant effects or critical hazards.
Target organs	:	Contains material which causes damage to the following organs: eye, lens or cornea. Contains material which may cause damage to the following organs: kidneys, liver, skin.

Over-exposure signs/symptoms

Inhalation	:	Adverse symptoms may include the following: respiratory tract irritation coughing

Ingestion : No specific data.

Skin : Adverse symptoms may include the following:
irritation
redness

Eyes : Adverse symptoms may include the following:
pain or irritation
watering
redness

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

Section 3. Composition/information on ingredients

United States

Name	CAS number	%
2-[2-(2-Butoxyethoxy)ethoxy]ethanol	143-22-6	30 - 60
Polyethylene glycol	25322-68-3	10 - 30
2,2'-(Ethylenedioxy)diethanol	112-27-6	5 - 10
2-(2-Butoxyethoxy)ethanol	112-34-5	5 - 10
Ethanol, 2,2'-oxybis-	111-46-6	1 - 5
Sodium phosphate, tribasic	7601-54-9	1 - 5

Canada

Name	CAS number	%
2-[2-(2-Butoxyethoxy)ethoxy]ethanol	143-22-6	30 - 60
Polyethylene glycol	25322-68-3	10 - 30
2,2'-(Ethylenedioxy)diethanol	112-27-6	5 - 10
2-(2-Butoxyethoxy)ethanol	112-34-5	5 - 10
Ethanol, 2,2'-oxybis-	111-46-6	1 - 5
Sodium phosphate, tribasic	7601-54-9	1 - 5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 4. First aid measures

Eye contact : Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids.

Skin contact : After contact with skin, wash immediately with plenty of soap and water. Get medical attention if symptoms occur.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Call medical doctor or poison control center immediately. Contact your local Poison Control Center.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Protection of first-aiders : If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 5. Fire-fighting measures

Flammability of the product : No specific fire or explosion hazard.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Hazardous decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
phosphorus oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions : Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

Handling : Put on appropriate personal protective equipment. Avoid contact with used product. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

United States

Ingredient	Exposure limits
Polyethylene glycol	**AIHA WEEL (United States, 5/2010).** TWA: 10 mg/m³ 8 hour(s). Form: Aerosol
Ethanol, 2,2'-oxybis-	**AIHA WEEL (United States, 5/2010).** TWA: 10 mg/m³ 8 hour(s).
Sodium phosphate, tribasic	**AIHA WEEL (United States, 5/2010).** STEL: 5 mg/m³ 15 minute(s).

Canada

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredient	List name	ppm	mg/m³	Other	ppm	mg/m³	Other	ppm	mg/m³	Other	Notations
Sodium phosphate, tribasic	US AIHA 5/2010	-	-	-	-	5	-	-	-	-	
Polyethylene glycol		-	10	-	-	-	-	-	-	-	[a]
Ethanol, 2,2'-oxybis-		-	10	-	-	-	-	-	-	-	

Form: [a]Aerosol

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Respiratory : Not required under normal conditions of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Ensure an MSHA/NIOSH-approved respirator or equivalent is used.

Hands : Use gloves appropriate for work or task being performed. Recommended: Natural rubber (latex).

Eyes : Safety eyewear should be used when there is a likelihood of exposure. Recommended: Safety glasses with side shields.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. No special protective clothing is required. Recommended: Coveralls.

Environmental exposure controls : In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 9. Physical and chemical properties

Physical state : Liquid. [Fluid.]

Color : Colorless to Brown.

Flash point : Closed cup: 143.3°C (289.9°F) [Pensky-Martens.]

Flammable limits : Not available.

Odor : Mild.

pH : 7 to 11.5

Auto-ignition temperature : Not available.

Melting point/ Pour point : -47°C (-52.6°F)

Boiling point	: 284°C (543.2°F)	**Vapor pressure**	: <0.0013 kPa (<0.01 mm Hg) [20°C]
Relative density	: 1.01 to 1.04	**Vapor density**	: Not available.
Volatility	: Not available.	**Evaporation rate**	: Not available.
Viscosity	: Kinematic: 0.02 cm^2/s (2 cSt) (100°C) Kinematic: 10.65 cm^2/s (1065 cSt) (40°C)	**Solubility**	: Not available.

Section 10. Stability and reactivity

Chemical stability : The product is stable.

Conditions to avoid : No specific data.

Materials to avoid : Reactive or incompatible with the following materials: oxidizing materials and acids.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-[2-(2-Butoxyethoxy)ethoxy]ethanol	LD50 Oral	Rat	5300 mg/kg	-
2,2'-(Ethylenedioxy)diethanol	LC50 Inhalation Dusts and mists	Rat	>4400 mg/m3	4 hours
	LD50 Oral	Rat	>15000 mg/kg	-
2-(2-Butoxyethoxy)ethanol	LD50 Dermal	Rabbit	2700 mg/kg	-
	LD50 Oral	Rat	4500 mg/kg	-
Ethanol, 2,2'-oxybis-	LD50 Dermal	Rabbit	11890 mg/kg	-
	LD50 Oral	Rat	12000 mg/kg	-

Chronic toxicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Ethanol, 2,2'-oxybis-	-	-	-	None.	-	-

Section 12. Ecological information

Environmental effects : Not established

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
2,2'-(Ethylenedioxy)diethanol	Acute LC50 35000 ul/L Fresh water	Daphnia - Daphnia magna - <=24 hours	48 hours
	Acute LC50 >10000000 ug/L Marine water	Fish - Menidia beryllina - 40 to 100 mm	96 hours
	Chronic NOEC 24 g/L Fresh water	Daphnia - Daphnia magna	48 hours
2-(2-Butoxyethoxy)ethanol	Acute LC50 1300000 ug/L Fresh water	Fish - Lepomis macrochirus - 33 to 75 mm	96 hours
Sodium phosphate, tribasic	Acute LC50 28500 ug/L Fresh water	Fish - Gambusia affinis - Adult	96 hours
Polyethylene glycol	Acute LC50 >1000000 ug/L Fresh water	Fish - Salmo salar - Parr - 8.2 to 11.7 cm - 5.1 to 14.1 g	96 hours
Ethanol, 2,2'-oxybis-	Acute LC50 >32000000 ug/L Fresh water	Fish - Gambusia affinis - Adult	96 hours

Section 13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. This material and its container must be disposed of in a safe way. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Empty containers or liners may retain some product residues. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.

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

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

DOT/TDG/IMDG/IATA : Not regulated.

Section 15. Regulatory information

United States

HCS Classification : Toxic material
Irritating material
Target organ effects

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: 3,6,9-trioxaundecane-1,11-diol; Triethylene glycol monomethyl ether; 2,2'-(Ethylenedioxy)diethanol; 2-(2-Butoxyethoxy)ethanol; Ethanol, 2,2'-oxybis-; Sodium phosphate, tribasic
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: 3,6,9-trioxaundecane-1,11-diol: Immediate (acute) health hazard, Delayed (chronic) health hazard; Triethylene glycol monomethyl ether: Immediate (acute) health hazard, Delayed (chronic) health hazard; 2,2'-(Ethylenedioxy)diethanol: Immediate (acute) health hazard, Delayed (chronic) health hazard; 2-(2-Butoxyethoxy)ethanol: Fire hazard, Immediate (acute) health hazard; Ethanol, 2,2'-oxybis-: Immediate (acute) health hazard, Delayed (chronic) health hazard; Sodium phosphate, tribasic: Delayed (chronic) health hazard

Clean Water Act (CWA) 311: Sodium phosphate, tribasic; Sodium hydroxide

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements :	2-[2-(2-Butoxyethoxy)ethoxy]ethanol	143-22-6	30 - 60
	Triethylene glycol monomethyl ether	112-35-6	10 - 30
	2-(2-Butoxyethoxy)ethanol	112-34-5	5 - 10
Supplier notification :	2-[2-(2-Butoxyethoxy)ethoxy]ethanol	143-22-6	30 - 60
	Triethylene glycol monomethyl ether	112-35-6	10 - 30
	2-(2-Butoxyethoxy)ethanol	112-34-5	5 - 10

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts : None of the components are listed.

New York : The following components are listed: Sodium phosphate, tribasic

New Jersey : The following components are listed: 2-[2-(2-Butoxyethoxy)ethoxy]ethanol; 2-[2-(2-Butoxyethoxy)ethoxy]ethanol; 2-[2-(2-Butoxyethoxy)ethoxy]ethanol; Sodium phosphate, tribasic

Pennsylvania : The following components are listed: 2-[2-(2-Butoxyethoxy)ethoxy]ethanol; 2-[2-(2-Butoxyethoxy)ethoxy]ethanol; 2,2'-(Ethylenedioxy)diethanol; 2-[2-(2-Butoxyethoxy)ethoxy]ethanol; Ethanol, 2,2'-oxybis-; Sodium phosphate, tribasic

California Prop. 65

No products were found.

Canada

WHMIS (Canada) : Class D-2B: Material causing other toxic effects (Toxic).

Canadian lists : **CEPA Toxic substances**: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: The following components are listed: 2-(2-Butoxyethoxy)ethanol
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

Canada inventory : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

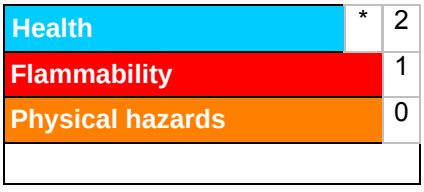
International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.

Section 16. Other information

United States

Label requirements : HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT AND EYE IRRITATION. MAY CAUSE SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Hazardous Material Information System (U.S.A.) :



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :

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