

AMSOIL Material Safety Data Sheet

Date Issued/Revised: January 4, 2008
Supersedes:

Section 1: Product and Company Identification

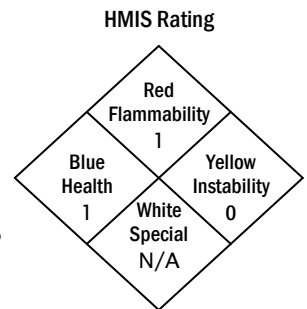
Manufacturer: AMSOIL, Inc. Telephone:
925 Tower Avenue CHEMTREC (Spill Emergency Only): 1-800-424-9300
Superior, WI 54880 Information: 715-392-7101

AMSOIL Product Code.....BF-4
Product Label NameSeries 600 High Performance Racing DOT 4 Brake Fluid
Product Use.....BRAKE FLUID

Section 2: Composition/Information on Ingredients

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

Component	CAS#	Weight%
2, 5,8, 11-Tetraoxatridecan-13-ol mixed esters with boric acid	176022-80-3	>65.0 - <75.0%
Triethylene glycol monomethyl ether	112-35-6	>15.0% - <30%
Monoethanolamine	141-43-5	>0.5% - 1.5%



Section 3: Hazards Identification

POTENTIAL HEALTH EFFECTS: **Caution!** May cause eye irritation. Isolate area

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communications Standard, 29 CFR 1910.1200

Potential Health Effects

Eye Contact: May cause moderate eye irritation. May cause slight corneal injury.

Skin Contact: Prolonged exposure not likely to cause significant skin irritation. May cause more severe response on covered skin (under clothing, gloves).

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Inhalation: Prolonged exposure is not expected to cause adverse effects.

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

Effects of Repeated Exposure: For major component(s): In animals, effects have been reported on the following organs after ingestion: Testes

Birth Defects/Developmental Effects: For the major component(s): Has been toxic to the fetus in lab animals at doses toxic to the mother.

Section 4: First Aid Measures

EYE: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1 - 2 minutes and continue washing for several minutes. If effects occur, consult a physician, preferably an ophthalmologist.

SKIN: Wash skin with plenty of water.

INHALATION: Remove exposed person to fresh air. If breathing is labored give oxygen. If breathing has stopped apply artificial respiration. Get immediate medical attention.

INGESTION: If swallowed seek medical attention. DO NOT INDUCE VOMITING unless directed to do so by medical personnel.

NOTE TO

PHYSICIAN: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Section 5: Fire Fighting Measures

EXTINGUISHING MEDIA: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

FIREFIGHTING EQUIPMENT: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquid may be moved by flushing water to protect personnel and minimize property damage.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (including fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

HAZARDOUS COMBUSTION PRODUCTS: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to and carbon monoxide. Carbon dioxide, combustion products may include trace amounts of nitrogen oxides.

Section 6: Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Small spills: Absorb with materials such as sand or vermiculite.

Collect suitable and properly labeled containers. Large spills: Dike area to contain spill. Pump into suitable and properly labeled containers.

Personal Precautions: Refer to Section 7, Handling and Storage for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Section 7: Handling and Storage

HANDLING: Do not puncture or incinerate can. Avoid contact with eyes, skin or clothing. Wash hands after handling.

STORAGE: Store in the following materials: Carbon steel, stainless steel, phenolic lined steel drums. Do not store in aluminum, copper, galvanized iron or galvanized steel

OTHER PRECAUTIONS: Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Section 8: Exposure Controls/Personal Protection

Component	List	Type	Value
Triethylene glycol monomethyl ether borate ester	ACGIH	TWA Inhalable fraction	4 mg/m ³
	ACGIH	STEL Inhalable fraction	6 mg/m ³
Monoethanolamine	ACGIH	TWA	3 ppm
	ACGIH	STEL	6 ppm
	OSHA Table Z-1	PEL	6 mg/m ³ 3ppm

- VENTILATION:** Use adequate general or local exhaust ventilation to keep airborne concentrations below exposure limits.
- RESPIRATORY:** Use a NIOSH approved respirator when necessary. Atmospheric levels should be maintained below the exposure guideline. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.
- INGESTION:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.
- SKIN:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Remove contaminated clothing immediately, wash skin with soap and water, and launder clothing before reuse or dispose of properly. **HAND PROTECTION:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber, Polyethylene, Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Viton, Neoprene. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Nitril/butadiene rubber ("nitrile" or "NBR"). **NOTICE:** The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instruction/specifications provided by the glove supplier.
- EYE:** Use splash goggles or face shield where splashing is expected or can occur. Eye wash should be located in immediate work area.

Section 9: Physical and Chemical Properties

Physical State	Liquid
Boiling Point	683°F (361°C) Approximate
Flash Point – Closed Cup	295°F (146°C)
Freezing Point	-74°F (-59°C)
Vapor Pressure	<0.01 mmHg @ 20°C ASTM D4052
Vapor Density (Air=1).....	10
Evaporation Rate (Butyl Acetate=1).....	0.01
Solubility in Water	100% @ 20°C
Specific Gravity (Water=1)	1.080
Density, lb./gal.....	Not Determined
Volatility (Volume)	N/A
Coefficient of Water/Oil Distribution	Not Determined
Odor	Ether
Odor Threshold	Not Determined
Appearance	Colorless to yellow
Viscosity, cSt @ 100°C	2.0
Viscosity, cSt @ 40°C	Not Applicable
Viscosity Index	Not Applicable

Section 10: Stability and Reactivity

- STABILITY:** Stable under recommended storage conditions. See Storage, Section 7
- CONDITIONS TO AVOID:** Do not distill to dryness. Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

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INCOMPATIBILITY: Avoid contact with strong oxidizers, strong acids, and strong bases.

HAZARDOUS POLYMERIZATION: Will not occur.

THERMAL DECOMPOSITION: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include but are not limited to aldehydes, Ketones and organic acids.

Section 11: Toxicological Information

ACUTE EXPOSURE

Ingestion: For major components: LD50, Rat 11,000 mg/kg

Skin Absorption: For major components: LD50, Rabbit 7,400 – 10,500 mg/kg

Repeated Dose Toxicity: For the major components: In animals, effects have been reported on the following organs after ingestion: Testes

CHRONIC EXPOSURE

Chronic Toxicity: No relevant information found

Mutagenicity: No data available to indicate product present at greater than 1.0% present a mutagenic or genotoxic hazard.

Developmental: For the major component(s): Has been toxic to the fetus in lab animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

Reproductive Toxicity: Monoethanolaminein, in animal studies, did not interfere with reproduction.

Genetic Toxicology: In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity studies in animals were negative for component(s) tested.

Section 12: Ecological Information

CHEMICAL FATE

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50)

Persistence and Degradability

Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Ecotoxicity

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50 greater than 100 mg/L in most sensitive species)

Section 13: Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed permitted incinerator or other thermal destruction device

Section 14: Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
NOT REGULATED

IMDG
NOT REGULATED

ICAO/IATA
NOT REGULATED

Section 15: Regulatory Information

U.S. Federal Regulations

OSHA Hazard Communication Standard - This product is a "Hazardous Chemical" as defined by the OSHA HAZARD Communication Standard, 29 CFR 1910.1200

TSCA All Components Listed

CERCLA 40 CFR 302.4..... Not Applicable

SARA Title III

Section 302 Extremely Hazardous..... Not Applicable

Section 311/312

Fire HazardNo

Reactive Hazard.....No

Release of Pressure.....No

Acute Health Hazard Yes

Chronic Health Hazard..... Yes

Section 313 Toxic Chemical

Components	Cas#	Amount
Triethylene glycol monomethyl ether	112-35-6	>15.0 - < 30%
Monoethanolamine	141-43-5	>0.5 - <1.0%

U.S. State Regulations

Pennsylvania (Workers and community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance list, and are present at levels with require reporting.

Components	Cas#	Amount
Monoethanolamine	141-43-5	>0.5 - <1.5%
Triethylene glycol monomethyl etherl	112-35-6	>15.0 - <30.0%

California (Prop 65)

Does not contain chemicals known to the state of California to cause cancer.

Section 16: Other Information

The information and recommendations contained herein are, to the best of AMSOIL's knowledge and belief, accurate and reliable as of the date issued. AMSOIL makes no warranty or guarantee, expressed or implied, of their accuracy or reliability, and AMSOIL shall not be liable for any loss or damage based upon the criteria supplied by the developers of these rating systems, together with AMSOIL's interpretation of the available data.