

Material Safety Data Sheet**1. MATERIAL AND COMPANY IDENTIFICATION**

Material Name : Pennzoil Brake Fluid DOT 4/3
Uses : Brake fluid.

Manufacturer/Supplier : SOPUS Products
PO BOX 4427
Houston, TX 77210-4427
USA

MSDS Request : 877-276-7285

Emergency Telephone Number
Spill Information : 877-242-7400
Health Information : 877-504-9351

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Identity	CAS No.	Concentration
Triethylene glycol monobutyl ether	143-22-6	25.00 %
2-(2-butoxyethoxy)ethanol	112-34-5	10.00 %
Diethylene glycol monopropyl ether	6881-94-3	10.00 %
Diethylene Glycol Monoethyl Ether	111-90-0	2.50 %
Triethylene glycol monoethyl ether	112-50-5	2.50 %

Blend of glycol ethers and additives.

3. HAZARDS IDENTIFICATION

Emergency Overview	
Appearance and Odour	: Pale yellow. Liquid. Ethereal.
Health Hazards	: Not classified as dangerous for supply or conveyance.
Safety Hazards	: Not classified as flammable but will burn.
Environmental Hazards	: Not classified as dangerous for the environment.

Health Hazards
Inhalation : Slightly irritating to respiratory system.
Skin Contact : May cause slight irritation to skin.
Eye Contact : Moderately irritating to eyes.
Ingestion : Low toxicity if swallowed.
Signs and Symptoms : Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.
Aggravated Medical Condition : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Eyes. Skin. Respiratory system.

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- Environmental Hazards** : Not classified as dangerous for the environment.
Additional Information : Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

4. FIRST AID MEASURES

- General Information** : Not expected to be a health hazard when used under normal conditions.
Inhalation : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
Skin Contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.
Eye Contact : Flush eyes with water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision, or swelling persist, transport to the nearest medical facility for additional treatment.
Ingestion : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
Advice to Physician : Treat symptomatically.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

- Flash point** : > 100 °C / 212 °F
Auto ignition temperature : > 300 °C / 572 °F
Specific Hazards : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.
Suitable Extinguishing Media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable Extinguishing Media : Do not use water in a jet.
Protective Equipment for Firefighters : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

- Protective measures** : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
Clean Up Methods : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or

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Additional Advice : other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
: Local authorities should be advised if significant spillages cannot be contained.

7. HANDLING AND STORAGE

General Precautions : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Handling : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.

Storage : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F

Recommended Materials : For containers or container linings, use mild steel or high density polyethylene.

Unsuitable Materials : PVC.

Additional Information : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

Contains no components with occupational exposure limit values.

Exposure Controls : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

Personal Protective Equipment : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Respiratory Protection : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker

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- health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
- Environmental Exposure Controls** : Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Pale yellow. Liquid.
 Odour : Ethereal.
 pH : Typical 7.5 - 11.5
 Initial Boiling Point and Boiling Range : > 260 °C / 500 °F
 Melting / freezing point : -47.22 °C / -53.00 °F
 Flash point : > 100 °C / 212 °F
 Auto-ignition temperature : > 300 °C / 572 °F
 Vapour pressure : > 0.10 mmHg
 Specific gravity : Data not available
 Density : Typical 1,030 - 1,070 kg/m³
 Water solubility : Miscible.
 Kinematic viscosity : Typical 770 mm²/s
 Decomposition Temperature : Data not available

10. STABILITY AND REACTIVITY

- Stability** : Stable. Hygroscopic.

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Conditions to Avoid	: Exposure to water vapour.
Materials to Avoid	: Mineral oils. Water vapour.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on data on the components and the toxicology of similar products.
Acute Oral Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat
Acute Dermal Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit
Acute Inhalation Toxicity	: Expected to be of low toxicity: LC50 >5 mg/l / 4 h, Rat
Skin Irritation	: Expected to be slightly irritating.
Eye Irritation	: Expected to be slightly irritating.
Respiratory Irritation	: Inhalation of vapours or mists may cause irritation.
Sensitisation	: Not expected to be a skin sensitiser.
Repeated Dose Toxicity	: Not expected to be a hazard.
Mutagenicity	: Not expected to be mutagenic.
Carcinogenicity	: Not expected to be carcinogenic.
Reproductive and Developmental Toxicity	: Not expected to be a hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

Acute Toxicity	: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract).
Mobility	: Liquid under most environmental conditions. Dissolves in water. If product enters soil, it will be highly mobile and may contaminate groundwater.
Persistence/degradability	: Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.
Bioaccumulation	: Not expected to bioaccumulate significantly.
Other Adverse Effects	: Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

Material Disposal	: Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
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- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION

US Department of Transportation Classification (49CFR)

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

IMDG

This material is not classified as dangerous under IMDG regulations.

IATA (Country variations may apply)

This material is not classified as dangerous under IATA regulations.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Federal Regulatory Status

Notification Status

DSL	All components listed.
EINECS	All components listed.
TSCA	All components listed.

Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)

Pennzoil Brake Fluid DOT 4/3 () Reportable quantity: 4 lbs

Triethylene glycol monobutyl ether
(143-22-6)

2-(2-butoxyethoxy)ethanol (112-34-5)

Diethylene glycol monopropyl ether
(6881-94-3)

Diethylene Glycol Monoethyl Ether
(111-90-0)

Triethylene glycol monoethyl ether
(112-50-5)

Material Safety Data Sheet**SARA Hazard Categories (311/312)**

No SARA 311/312 Hazards.

SARA Toxic Release Inventory (TRI) (313)

Triethylene glycol monobutyl ether (143-22-6)	25.00%
2-(2-butoxyethoxy)ethanol (112-34-5)	10.00%
Diethylene glycol monopropyl ether (6881-94-3)	10.00%
Diethylene Glycol Monoethyl Ether (111-90-0)	2.50%
Triethylene glycol monoethyl ether (112-50-5)	2.50%

State Regulatory Status**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**

This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

New Jersey Right-To-Know Chemical List

Triethylene glycol monobutyl ether (143-22-6)	Listed.
2-(2-butoxyethoxy)ethanol (112-34-5)	Listed.
Diethylene glycol monopropyl ether (6881-94-3)	Listed.
Diethylene Glycol Monoethyl Ether (111-90-0)	Listed.
Triethylene glycol monoethyl ether (112-50-5)	Listed.

Pennsylvania Right-To-Know Chemical List

Triethylene glycol monobutyl ether (143-22-6)	Environmental hazard. Listed.
2,2'-oxydiethanol (111-46-6)	Listed.
2-(2-butoxyethoxy)ethanol (112-34-5)	Environmental hazard. Listed.
Diethylene glycol monopropyl ether (6881-94-3)	Environmental hazard. Listed.
Triethylene glycol (112-27-6)	Listed.
Diethylene Glycol Monoethyl Ether (111-90-0)	Environmental hazard. Listed.
Triethylene glycol monoethyl ether (112-50-5)	Environmental hazard.

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Listed.

16. OTHER INFORMATION

- NFPA Rating (Health, Fire, Reactivity)** : 0, 1, 0
- MSDS Version Number** : 1.0
- MSDS Effective Date** : 09/09/2008
- MSDS Revisions** : A vertical bar (|) in the left margin indicates an amendment from the previous version.
- MSDS Regulation** : The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
- Uses and Restrictions** : Use only as hydraulic fluid in vehicle brake and clutch systems. Do not mix with silicone type or silicate ester type brake fluids.
- MSDS Distribution** : The information in this document should be made available to all who may handle the product.
- Disclaimer** : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.