



MATERIAL SAFETY DATA SHEET

ZAK DOT 3 BRAKE FLUID

PRODUCT CODE: BK100

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: ZAK DOT 3 BRAKE FLUID
Chemical Family: GLYCOL ETHER
Synonyms: None
Supplier: ZAK Products, 720 Industrial Blvd. #400, Grapevine, TX, 76051
Emergency Telephone (24 hr.): CHEMTREC 1-800-424-9300
Information Telephone: ZAK Products 1-800-514-6011 During normal business hours CST 817-645-6088.

Revision Date: 8/13/2003
Date Printed: 4/11/2003

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient/CAS No.	wt. %	OSHA PEL TWA	OSHA PEL Ceiling Limits	ACGIH TLV TWA	ACGIH TLV STEL
Diethylene Glycol 111-46-6	5-15	None Known	None Known	None Known	None Known
Diethylene Glycol Monobutyl Ether 112-34-5	5-20	None Known	None Known	None Known	None Known
Triethylene Glycol Monomethyl Ether 112-35-6	5-50	None Known	None Known	None Known	None Known
Triethylene Glycol Monoethyl Ether 112-50-5	5-50	None Known	None Known	None Known	None Known
Triethylene Glycol Monobutyl Ether 143-22-6	5-50	None Known	None Known	None Known	None Known
Tetraethylene Glycol Monobutyl Ether 1559-34-8	5-20	None Known	None Known	None Known	None Known
Polyalkylene Glycol Monomethyl Ether 23783-42-8	5-20	None Known	None Known	None Known	None Known
Polyethylene Glycol 25322-68-3	5-20	None Known	None Known	None Known	None Known
Polyalkylene Glycol Monobutyl Ether 9004-77-7	5-20	None Known	None Known	None Known	None Known
Polyalkylene Glycols 9038-95-3	5-20	None Known	None Known	None Known	None Known
Diethylene Glycol Monomethyl Ether 111-77-3	<5	None Known	None Known	None Known	None Known
Diethylene Glycol Monoethyl Ether 111-90-0	<5	None Known	None Known	None Known	None Known
Trade Secret : Trade Secret Inhibitor Package	<3	None Known	None Known	None Known	None Known

3. HAZARDS IDENTIFICATION

Emergency Overview: Danger: May be fatal if swallowed. This material is an eye irritant. May cause allergic skin reaction. Vapors are mildly to markedly irritating to the lungs depending on the exposure level. Ingestion may cause abdominal discomfort, nausea, and vomiting. May produce central nervous system depression and kidney damage.

4. FIRST AID MEASURES

Eye Contact: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion: Induce vomiting immediately as directed by medical personnel. Never give fluids or induce vomiting if the victim is unconscious or having convulsions.

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention. Vapors or mists from this material can irritate the nose, throat and lungs, and cause signs and symptoms of central nervous system depression, depending on the concentration and duration of exposure.

Skin Contact: Wash with soap and water. Remove contaminated clothing and shoes, and launder before reuse. Get medical attention if irritation persists.

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5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point °F(°C): >135C. (>275 F.)
Flash Point Method: TAG Closed Cup
Flammable Limits in Air - Lower (%): Not Determined
Flammable Limits in Air - Upper (%): Not Determined
Autoignition Temperature °F(°C): Not Determined
Extinguishing Media: Water fog, carbon dioxide, foam, dry chemical. DO NOT use straight water streams.

Protection Of Fire-Fighters:

Special Fire-Fighting Procedures: Wear approved positive-pressure self-contained breathing apparatus and protective clothing. Do not reuse runoff from fire control methods to sewers or waterways. Fight from a maximum distance or use unmanned hose holders or monitor nozzles. Containers can build up pressure if exposed to heat; cool with flooding quantities of water until well after the fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of vessel.

Hazardous Combustion Products: Carbon Dioxide. Carbon Monoxide. Unidentified organic compounds.

Aerosol Comments: Not Applicable

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective clothing and equipment to prevent skin and eye contact.
Spill Procedures: Avoid all sources of ignition; heat, sparks and open flames. Contain any liquid from leaking containers. Wear protective equipment specified. Ventilate spill area. Soak up material with absorbent and place in chemical waste container.
 If clean-up is not immediate, cover spill with plastic or canvas to keep dry.

Environmental Precautions: Do not allow to enter sanitary drains, sewer or surface and subsurface waters.

7. HANDLING AND STORAGE

Handling and Storage: Do Not Swallow. Store in a cool, dry place. Use only in a well ventilated area. Keep container closed when not in use to prevent contact with acidic, basic or oxidizing materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Exhaust ventilation. Eyewash stations. Showers.
Eyes: Chemical goggles; also wear a face shield if splashing hazard exists.
Skin Protection: Avoid skin contact. Wear protective clothing and gloves. Rubber, Neoprene or Vinyl.
Respiratory Protection: An approved respirator (i.e. NIOSH, etc.) should be worn when exposures are expected to exceed the applicable limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, yellow to amber colloidal liquid
Odor: MILD **pH Value:** 10 - 11.5
Vapor Pressure: Not Determined **Vapor Density (Air=1):** Not Determined
Boiling Point (°F): 480 F. (249 C) **Melting/Freezing Point:** -58 F. (-50 C.)
Solubility in Water: SOLUBLE **Bulk Density at 20°C:** 8.33 - 9.02 lb/gal
Molecular Weight: Mixture **Evaporation Rate:** <.01
Viscosity: Not determined. **Specific Gravity (H2O=1):** 1.000 - 1.070 @ 4 C.
VOC Content(%): Not determined. **Decomposition Temperature:** Not Known

10. STABILITY AND REACTIVITY

Chemical Stability: STABLE.
Conditions to Avoid: Keep away from heat, sparks and flame.
Materials to Avoid: Avoid contact with acidic, basic or oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide. Carbon dioxide. Unknown organic compounds.
Hazardous Polymerization: WILL NOT OCCUR

11. TOXICOLOGICAL INFORMATION

Toxicological Data:

Ingredient/CAS No.	wt. %	Route	Species	Dose
Diethylene Glycol 111-46-6	5-15	Oral	Rats	LD50 12565 mg/kg
Diethylene Glycol Monobutyl Ether 112-34-5	5-20	Oral	Rats	LD50 5660 mg/kg
Triethylene Glycol Monomethyl Ether 112-35-6	5-50	Oral	Rats	LD50 11300 uL/kg
Triethylene Glycol Monoethyl Ether 112-50-5	5-50	Oral	Rats	LD50 7750 mg/kg
Triethylene Glycol Monobutyl Ether	5-50	Oral	Rats	LD50 5300 mg/kg

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Ingredient/CAS No.	wt. %	Route	Species	Dose
143-22-6				
Tetraethylene Glycol Monobutyl Ether 1559-34-8	5-20	NA	NA	Not Known
Polyalkylene Glycol Monomethyl Ether 23783-42-8	5-20	NA	NA	NA
Polyethylene Glycol 25322-68-3	5-20	Oral	Rats	LD50 28 gm/kg
Polyalkylene Glycol Monobutyl Ether 9004-77-7	5-20	NA	NA	NA
Polyalkylene Glycols 9038-95-3	5-20	Oral	Rats	LD50 12300 uL/kg
Diethylene Glycol Monomethyl Ether 111-77-3	<5	Oral	Rats	LD50 4 mL/kg
Diethylene Glycol Monoethyl Ether 111-90-0	<5	Oral	Rats	LD50 5500 mg/kg
Trade Secret : Trade Secret Inhibitor Package	<3	Oral	Rats	>2000 mg/kg

Carcinogenicity:

Ingredient/CAS No.	wt. %	IARC	NTP	OSHA
Diethylene Glycol 111-46-6	5-15	Not Listed	Not Listed	Not Listed
Diethylene Glycol Monobutyl Ether 112-34-5	5-20	Not Listed	Not Listed	Not Listed
Triethylene Glycol Monomethyl Ether 112-35-6	5-50	Not Listed	Not Listed	Not Listed
Triethylene Glycol Monoethyl Ether 112-50-5	5-50	Not Listed	Not Listed	Not Listed
Triethylene Glycol Monobutyl Ether 143-22-6	5-50	Not Listed	Not Listed	Not Listed
Tetraethylene Glycol Monobutyl Ether 1559-34-8	5-20	Not Listed	Not Listed	Not Listed
Polyalkylene Glycol Monomethyl Ether 23783-42-8	5-20	Not Listed	Not Listed	Not Listed
Polyethylene Glycol 25322-68-3	5-20	Not Listed	Not Listed	Not Listed
Polyalkylene Glycol Monobutyl Ether 9004-77-7	5-20	Not Listed	Not Listed	Not Listed
Polyalkylene Glycols 9038-95-3	5-20	Not Listed	Not Listed	Not Listed
Diethylene Glycol Monomethyl Ether 111-77-3	<5	Not Listed	Not Listed	Not Listed
Diethylene Glycol Monoethyl Ether 111-90-0	<5	Not Listed	Not Listed	Not Listed
Trade Secret : Trade Secret Inhibitor Package	<3	Not Known	Not Known	Not Known

12. ECOLOGICAL INFORMATION

Ecological testing has not been conducted on this product.

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13. DISPOSAL CONSIDERATION

Waste Classification: No specific component of this material is listed as a Hazardous Substance CERCLA (40 CFR 261). However, this product contains various ethylene glycols and glycol ethers which are each included as a broad category on the CERCLA Hazardous substances list.

Waste Management: Recovery and reuse, rather than disposal, should be the ultimate goal of handling efforts.
Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT:
Proper Shipping Name: Not Regulated
Hazard Class: Not Regulated
UN/NA Number: Not Applicable
DOT Packing Group: Not Applicable
IMDG:
Proper Shipping Name: Not Applicable
Hazard Class: Non-Hazardous
Hazard Subclass: Not Applicable
UN No.: Not Applicable
Packing Group: Not Applicable
Marine Pollutant: No

15. REGULATORY INFORMATION

US Federal Regulations:

Ingredient/CAS No.	wt. %	SARA 313	SARA 302	RQ	TPQ
Diethylene Glycol 111-46-6	5-15	Not Listed	Not Listed	NA	NA
Diethylene Glycol Monobutyl Ether 112-34-5	5-20	Not Listed	Not Listed	NA	NA
Triethylene Glycol Monomethyl Ether 112-35-6	5-50	Not Listed	Not Listed	NA	NA
Triethylene Glycol Monoethyl Ether 112-50-5	5-50	Not Listed	Not Listed	NA	NA
Triethylene Glycol Monobutyl Ether 143-22-6	5-50	Not Listed	Not Listed	NA	NA
Tetraethylene Glycol Monobutyl Ether 1559-34-8	5-20	Not Listed	Not Listed	NA	NA
Polyalkylene Glycol Monomethyl Ether 23783-42-8	5-20	Not Listed	Not Listed	NA	NA
Polyethylene Glycol 25322-68-3	5-20	Not Listed	Not Listed	NA	NA
Polyalkylene Glycol Monobutyl Ether 9004-77-7	5-20	Not Listed	Not Listed	NA	NA
Polyalkylene Glycols 9038-95-3	5-20	Not Listed	Not Listed	NA	NA
Diethylene Glycol Monomethyl Ether 111-77-3	<5	Not Listed	Not Listed	NA	NA
Diethylene Glycol Monoethyl Ether 111-90-0	<5	Not Listed	Not Listed	NA	NA
Trade Secret : Trade Secret Inhibitor Package	<3	Not Known	Not Known	NA	NA

No specific component of this material is listed as a Hazardous Substance CERCLA (40 CFR 261). However, this product contains various ethylene glycols and glycol ethers which are each included as a broad category on the CERCLA Hazardous substances list.

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SARA 311/312 Hazard Categories: Delayed

State Regulations:

Ingredient/CAS No.	wt. %	California Prop. 65 Cancer list	California Prop. 65 Developmental Toxicity	California Prop. 65 Reproductive Female	California Prop. 65 Reproductive Male
Diethylene Glycol 111-46-6	5-15	Not Listed	Not Listed	Not Listed	Not Listed
Diethylene Glycol Monobutyl Ether 112-34-5	5-20	Not Listed	Not Listed	Not Listed	Not Listed
Triethylene Glycol Monomethyl Ether 112-35-6	5-50	Not Listed	Not Listed	Not Listed	Not Listed
Triethylene Glycol Monoethyl Ether 112-50-5	5-50	Not Listed	Not Listed	Not Listed	Not Listed
Triethylene Glycol Monobutyl Ether 143-22-6	5-50	Not Listed	Not Listed	Not Listed	Not Listed
Tetraethylene Glycol Monobutyl Ether 1559-34-8	5-20	Not Listed	Not Listed	Not Listed	Not Listed
Polyalkylene Glycol Monomethyl Ether 23783-42-8	5-20	Not Listed	Not Listed	Not Listed	Not Listed
Polyethylene Glycol 25322-68-3	5-20	Not Listed	Not Listed	Not Listed	Not Listed
Polyalkylene Glycol Monobutyl Ether 9004-77-7	5-20	Not Listed	Not Listed	Not Listed	Not Listed
Polyalkylene Glycols 9038-95-3	5-20	Not Listed	Not Listed	Not Listed	Not Listed
Diethylene Glycol Monomethyl Ether 111-77-3	<5	Not Listed	Not Listed	Not Listed	Not Listed
Diethylene Glycol Monoethyl Ether 111-90-0	<5	Not Listed	Not Listed	Not Listed	Not Listed
Trade Secret : Trade Secret Inhibitor Package	<3	Not Listed	Not Listed	Not Listed	Not Listed

U.S. TSCA: The components of this product are listed on the TSCA Inventory.

16. OTHER INFORMATION

General Notes: Do not allow undiluted material or large quantities to reach groundwater, bodies of water or sewer system.

Disclaimer:

The information and recommendations contained herein are based upon tests believed to be reliable. However, the manufacturer/distributor of this product does not guarantee their accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage may be required. The manufacturer/distributor assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.