



# Material Safety Data Sheet

## SECTION 1

## PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Lucas DOT 4 Brake Fluid

**Product Description:** Polyethylene glycol ethers and Additives

**Product Number:** 10827

**Intended Use:** Brake and Clutch Systems

### COMPANY IDENTIFICATION

**Supplier:** Lucas Oil Products Inc.

302 North Sheridan St.  
Corona, ca. 92880 USA

Phone #: 1 (800) 342-2512

Emergency Phone #: 1 (951) 493-1149 (8:00 A.M. to 5:00 P.M.)

After 5:00 P.M. 1 (951) 847-5949

## SECTION 2

## HAZARDS IDENTIFICATION

**Appearance:** Clear to amber

**Odor:** Mild odor

**Classification:** Skin irritation Category 2, Eye irritation, Category 2A

**Target organs:** Kidney, liver, central nervous system



**Signal Word:**

**Warning**

**Hazard Statement:** Harmful if swallowed. Causes mild skin irritation. Causes eye irritation

**Other hazards:** Combustible liquid. Repeated exposure may cause dryness of the skin.  
Vapors may cause respiratory irritation.

**Precautions:** Wear eye and skin protection before handling. Do not breathe mist/vapors/sprays. Use in a well ventilated area. Wear protective gloves/protective clothing. IF IN EYES: Flush with water for 15 minutes and consult a physician. Do not ingest. IF SWALLOWED: Do Not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

**Disposal:** Keep out of waterways. Check local, national, and international regulations for proper disposal

**HMIS:** Health - 2 Fire - 1 Instability - 0

**SECTION 3**

**COMPOSITION/INFORMATION ON INGREDIENTS**

**Hazardous Ingredients:**

Component	CAS No.	Conc (wt%)
Triethylene Glycol Monomethyl Borate Ester	71243-41-9	30-40
Triethylene Glycol Monomethyl Ether	112-35-6	28-31
Polyethylene Glycol Monomethyl Ether	9004-74-4	14-28
Diethylene Glycol	111-45-6	0-5
Triethylene Glycol Monobutyl Ether	143-22-6	0-5
Additives	Proprietary	<1

**SECTION 4**

**FIRST AID MEASURES**

**Eyes** Remove contact lenses, if worn. Rinse with running water for at least 15 minutes, lifting upper and lower eyelids occasionally. Seek medical attention.

**Skin** Remove affected clothing and launder before reuse. Wash affected area for at least 15 minutes with soap and running water. Prolonged or repeated exposure may cause defatting of the skin – symptoms include redness, dryness, cracking

<b>Inhalation</b>	Remove exposed person to fresh air immediately. Restore or assist breathing, if necessary. Get medical attention immediately if symptoms of CNS depression or intoxication develop
<b>Ingestion</b>	Do Not induce vomiting. If conscious, give two full glasses of water. If a significant volume has been swallowed, get medical attention immediately
<b>Additional Info</b>	Not determined

<b>SECTION 5</b>	<b>FIRE FIGHTING MEASURES</b>
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<b>NFPA:</b>	<b>Health -1</b>	<b>Fire -1</b>	<b>Instability - 0</b>
<b>Flash Point</b>	>121°C/ 249°F		
<b>Extinguishing Media</b>	For small fires use alcohol foam, dry chemical or CO2. For larger fires apply large (flooding) quantities of water from as far away as possible in a spray or mist		
<b>Unsuitable Media</b>	Water jet may be ineffective		
<b>Firefighting Procedures</b>	Wear a self-contained breathing apparatus if necessary based on concentration of smoke. Material will produce oxides of carbon as combustion products		
<b>Unusual Hazards</b>	Not Determined		

<b>SECTION 6</b>	<b>ACCIDENTAL RELEASE MEASURES</b>
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**Personal precautions, protective equipment, and emergency procedures:**

Ventilate if released in a confined area. Avoid breathing mists/vapors/spray. Product may present slipping hazard if left on the floor. Beware of vapors pooling in low areas to explosive concentrations.

**Environmental precautions:** Avoid release to the environment. Prevent from entering into soil, ditches, sewers, waterways or ground water

**Methods for removal:** Use an explosion proof pump to remove bulk liquid. Residual liquid can be absorbed on inert material. Dispose of contaminated adsorbent as hazardous waste. Wash the area with water after excess product and adsorbent is removed

<b>SECTION 7</b>	<b>HANDLING AND STORAGE</b>
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**Max Handling Temperature:** Not determined

**Procedures:** Use in a well ventilated area. Avoid breathing mists/vapors/spray. Avoid handling hot product where possible. Use appropriate personal protective equipment to avoid contact with skin and eyes. Note the location of nearest

emergency shower and eye wash station before use. Store with the lid tightly closed in a cool, dry, well ventilated place. Product is hygroscopic and effectiveness may diminish if opened product is stored for long period of time. Dispose of spilled or used material in accordance with local, regional, national, and international regulations.

**Max Store Temp:** Do not store or handle at elevated temperatures

<b>SECTION 8</b>	<b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
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### Exposure Limits

#### US

#### Guidelines by component

Diethylene Glycol (CAS# 111-46-6)

OSHA TWA: 10 mg/m<sup>3</sup>

**Other Exposure:** Not determined

**Engineering Controls:** Use in a well ventilated area. Local and general ventilation should keep methanol vapor concentration below permissible limits. Where exposure potential exceeds recommended limits, use NIOSH/OSHA approved supplied air respirator as recommended. Vapors are heavier than air and will tend to accumulate in low-lying areas.

### Personal Protective Equipment

**Respiratory** Use a NIOSH or CEN approved full-face respirator with multipurpose combination or type ABEK respirator cartridges as a backup to engineering controls. If the respirator is the only means of protection, use a full-face supplied air respirator

**Eye:** Use tightly fitting chemical splash goggles. Even appropriate where splashing is likely to occur

**Gloves:** Use nitrile, butyl, Viton or fluoroelastomer gloves. Even appropriate materials may degrade after prolonged exposure with product.

**Clothing:** Use chemical resistant pants and jackets, preferably of buty or nitrile rubber

**Other:** Locate the nearest eyewash station and safety shower before handling

**Hygiene:** Wash thoroughly after handling this product

<b>SECTION 9</b>	<b>PHYSICAL AND CHEMICAL PROPERTIES</b>
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### Appearance

<b>Odor</b>	Clear, pale yellow liquid
<b>Odor Threshold</b>	Mild, sweet odor
<b>pH</b>	7-11
<b>Melting Point</b>	<-50°C/-58°F
<b>Initial Boiling Point</b>	>232°C/449°F
<b>Flash Point</b>	121°C/249°F
<b>Evaporative Rate</b>	Not determined
<b>Upper Flammable Lm</b>	Not determined
<b>Lower Flammable Lm</b>	Not determined
<b>Explosive Data</b>	Vapors may form explosive mixtures in air
<b>Vapor Pressure</b>	0.09 hPa (0.07 mmHg) @ 20° (68°F)
<b>Volatile Organics</b>	Not determined
<b>Density</b>	1.06 mg/cu cm @ 15.6°C
<b>Solubility</b>	Miscible in water, alcohol, sparingly soluble in some organic solvents
<b>Kow</b>	Not determined
<b>Viscosity</b>	1.8 cSt @ 100°C
<b>Autoignition Point</b>	310°C (590°F)
<b>Decomposition Temp</b>	Not determined

<b>SECTION 10</b>
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<b>STABILITY AND REACTIVITY</b>
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**STABILITY:** Material is stable under normal conditions. Will not polymerize.

**CONDITIONS TO AVOID:** Excessive heat.

**MATERIALS TO AVOID:** Acetaldehyde, acids, chlorine, ethylene oxide, isocyanates, strong oxidizing agents, calcium hypochlorite, zinc and mineral oil.

**HAZARDOUS DECOMPOSITION PRODUCTS:** May form carbon dioxide and carbon monoxide.

<b>SECTION 11</b>
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<b>TOXICOLOGICAL INFORMATION</b>
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### Acute Exposure

<b>Eye Irritation</b>	Expected to cause mild to moderate irritation of the eye if exposed to liquid or in high vapor concentrations. May cause irritation, tearing, or burning of the eyes.
<b>Skin Irritation</b>	Expected to be mildly irritating to the skin. Symptoms of irritation may include redness, drying, and cracking of the skin.
<b>Respiratory Irritation</b>	High vapor concentrations may cause transient irritation to the respiratory system.
<b>Dermal Toxicity</b>	This product can be absorbed through the skin, but is of low order toxicity. Limit exposure to skin where possible.
<b>Inhalation Toxicity</b>	Toxicity is similar to that of oral ingestion, though this exposure mode is far less likely to occur.
<b>Oral Toxicity</b>	Low order of toxicity, not expected to cause injury under normal exposure conditions. If a large amount of material is swallowed, target organ effects and metabolic acidosis may occur.
<b>Aspiration Hazard</b>	This product has a very low viscosity and may be fatal if aspirated into the airways. Do Not induce vomiting, as this increases the risk of aspiration.

### Chronic Exposure

<b>Chronic Toxicity</b>	This product may cause dryness or defatting of the skin, dermatitis, or may aggravate existing skin conditions.
<b>Carcinogenicity</b>	This product and its components are NOT listed by the IARC, NTP, ACGIH, or OSHA as carcinogens.
<b>Mutagenicity</b>	N/A
<b>Teratogenicity</b>	Diethylene glycol has produced birth defects in rats at concentrations that are toxic to the mother.

### Additional Information

<b>Target organ toxicity</b>	Product is toxic to organs: Kidneys, liver, central nervous system, heart. Metabolic products of diethylene glycol produce acidosis and organ toxicity effects. In some cases, other metabolic abnormalities have been reported such as hyponatremia and hyperkalemia leading to nerve and cardiac damage.
<b>Synergistic effects</b>	Though specific data is not available, ethanol is a competing substrate for NAD-dependent alcohol dehydrogenase and may slow the product of harmful metabolic products of diethylene glycol

This material is expected to be readily biodegradable. Freshwater fish Acute LD50 > 590 mg/L. Freshwater invertebrates Acute LD 50 > 10 g/l

**SECTION 13****DISPOSAL CONSIDERATIONS****Disposal Considerations**

All disposal practices must be in accordance with local, regional, national and international regulations. Store material for disposal as indicated in section 7. Disposal by controlled incineration or by secure land fill may be acceptable – review applicable regulations or regulatory bodies before making disposal decisions.

**Contaminated Containers or Packaging**

Empty containers are likely to contain flammable vapors or explosive mixtures or vapor or air. Do Not weld, cut, or grind empty containers. Rinse empty containers with water and dispose of in accordance with local, regional, national, and international regulations.

**SECTION 14****TRANSPORT INFORMATION**

<b>US DOT</b>	Not dangerous goods
<b>IMDG</b>	Not dangerous goods
<b>ICAO/IATA</b>	Not dangerous goods

**SECTION 15****REGULATORY INFORMATION****Global Chemical Inventories/Regulations**

<b>USA</b>	All components of this material are on the US TSCA
<b>EU</b>	REACH
<b>New Zealand</b>	N/A
<b>Canada</b>	All components of this material are on the DSL
<b>SARA 313</b>	Triethylene glycol monobutyl ether (CAS # 143-22-6) Triethylene glycol monomethyl ether (CAS # 112-35-6)
<b>SARA 311/312</b>	Acute Hazard – Yes Chronic Hazard – Yes

Fire Hazard – Yes

Reactivity Hazard – No

**CERCLA** None

**CA Prop 65** None

**Right to Know Component**

Triethylene glycol monobutyl ether (CAS # 143-22-6) NJ, PA

Triethylene glycol monomethyl borate ester (CAS# 71243-41-9) NJ, PA

Triethylene glycol monomethyl ester (CAS # 143-22-6) NJ, PA

Tetraethylene glycol (CAS # 112-60-7) NJ, PA

**SECTION 16**

**OTHER INFORMATION**

**Original Date: 2-25-2013 Updated: New**

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