Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
Nissan DOT 4 Vehicle Brake Fluid

Product Code
None available.

Synonyms
None available.

Product Use
Automotive brake fluid. If this product is used in combination with other products, refer to the Safety Data Sheet for those products.

Restrictions on Use
None known.

MANUFACTURER
Nissan Canada Inc.
5290 Orbitor Drive
Mississauga, Ontario L4W-4Z5
Canada

Phone: 1-905-629-2888
Emergency Phone #: CANUTEC (613) 996-6666

Issue Date
February 15, 2019

Supersedes Issue Date
New Issue SDS

Original Issue Date
February 15, 2019

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with Schedule 1 of Hazardous Products Regulations (HPR) (SOR/2015-17)
- Serious Eye Damage/Eye Irritation - Category 2A
- Specific Target Organ Toxicity – Single Exposure – Category 2
- Specific Target Organ Toxicity - Repeated Exposure - Category 2 (kidneys)

GHS Label Elements

Symbol(s)

Signal Word
Warning

Hazard Statement(s)
- Causes serious eye irritation.
- May cause damage to organs.
- May cause damage to organs through prolonged or repeated exposure.
Precautionary Statement(s)

Prevention
Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product.

Response
If exposed or concerned: Call a POISON CENTER. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage
Store locked up.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards
None known.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>112-50-5</td>
<td>Triethylene glycol monoethyl ether</td>
<td>30-40</td>
</tr>
<tr>
<td>71243-41-9</td>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-, ester with boric acid (H3BO3), methyl ether</td>
<td>33-40</td>
</tr>
<tr>
<td>25322-68-3</td>
<td>Polyethylene glycol</td>
<td>6-14</td>
</tr>
<tr>
<td>112-34-5</td>
<td>Diethylene glycol monobutyl ether</td>
<td>5-10</td>
</tr>
<tr>
<td>111-46-6</td>
<td>Diethylene glycol</td>
<td>3-6</td>
</tr>
<tr>
<td>111-90-0</td>
<td>Diethylene glycol monoethyl ether</td>
<td>3-5</td>
</tr>
</tbody>
</table>

Section 4 - FIRST AID MEASURES

Inhalation
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin
IF ON SKIN: Wash with plenty of soap and water. Get medical attention, if needed. Take off contaminated clothing and wash it before reuse.

Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. Rinse mouth.

Most Important Symptoms/Effects
Acute
Causes serious eye damage.
Delayed
May cause damage to organs through prolonged or repeated exposure. May cause kidney damage.

**Indication of any immediate medical attention and special treatment needed**
Treat symptomatically and supportively.

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### Section 5 - FIRE FIGHTING MEASURES

**Extinguishing Media**

**Suitable Extinguishing Media**
Carbon dioxide, alcohol-resistant foam, dry chemical, water fog. Water or foam may cause frothing.

**Unsuitable Extinguishing Media**
Do not use high-pressure water streams.

**Special Hazards Arising from the Chemical**
Slight fire hazard. Avoid friction, static electricity and sparks.

**Hazardous Combustion Products**
Decomposition and combustion materials may be toxic. Burning may produce oxides of nitrogen, oxides of carbon.

**Fire Fighting Measures**
Move container from fire area if it can be done without risk. Keep storage containers cool with water spray. Heated containers may rupture or be thrown into the air. "Empty" containers may retain residue and can be dangerous.

**Special Protective Equipment and Precautions for Firefighters**
A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

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### Section 6 - ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment and Emergency Procedures**
Wear personal protective clothing and equipment. Avoid release to the environment.

**Methods and Materials for Containment and Cleaning Up**
Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean tool into a sealable container for disposal. Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

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### Section 7 - HANDLING AND STORAGE

**Precautions for Safe Handling**
Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Do not eat, drink or smoke when using this product. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean, sparkproof tools and explosion-proof equipment. When transferring product, metal containers, including trucks and tank cars, should be grounded and bonded. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes Skin clothing shoes. Do not smoke while using this product.

**Conditions for Safe Storage, Including any Incompatibilities**
Store locked up.
Keep container tightly closed when not in use and during transport. Store in a cool, dry, well-ventilated area. Do not pressurize, cut, heat or weld containers. Empty product containers may contain product residue. Do not reuse empty containers. Store locked up.

Incompatible Materials
Strong acids, bases, oxidizers.

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**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Component Exposure Limits**

<table>
<thead>
<tr>
<th>Compound</th>
<th>Identifier</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>112-34-5</td>
<td>10 ppm TWA inhalable fraction and vapor</td>
</tr>
<tr>
<td>Manitoba, Nova Scotia, Ontario, Prince Edward Island</td>
<td></td>
<td>10 ppm TWA inhalable fraction and vapor</td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td>10 ppm TWA inhalable fraction and vapor</td>
</tr>
<tr>
<td>Diethylene glycol monoethyl ether</td>
<td>111-90-0</td>
<td>30 ppm TWA ; 165 mg/m3 TWA</td>
</tr>
<tr>
<td>Ontario</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)**

There are no biological limit values for any of this product's components.

**Engineering Controls**

Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits.

**Individual Protection Measures, such as Personal Protective Equipment**

**Eye/face protection**

Wear safety glasses. Additional protection like goggles, face shields, or respirators may be needed dependent upon anticipated use and concentrations of mists or vapors. Eye wash fountain and emergency showers are recommended. Contact lens use is not recommended.

**Respiratory Protection**

Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

**Glove Recommendations**

Where skin contact is likely, wear gloves impervious to product; use of natural rubber (latex) or equivalent gloves is not recommended. To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, whole body suits, or other protective clothing.

**Protective Materials**

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to regulatory requirements. The following PPE should be considered the minimum required: Safety glasses, Gloves, and/or Lab coat or apron.

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**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear amber liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Not available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Clear, amber</td>
</tr>
<tr>
<td>pH</td>
<td>10.5</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>&gt;230 °C (446°F)</td>
</tr>
</tbody>
</table>
Boiling Point Range  Not available  Freezing point  Not available
Evaporation Rate  Not available  Flammability (solid, gas)  Not available
Autoignition Temperature  Not available  Flash Point  203 °C (397.4°F)
Lower Explosive Limit  Not available  Decomposition temperature  Not available
Upper Explosive Limit  Not available  Vapor Pressure  Not available
Vapor Density (air=1)  Not available  Specific Gravity (water=1)  Not available
Water Solubility  Not available  Partition coefficient: n-octanol/water  Not available
Viscosity  <1500 cSt  Kinematic viscosity  Not available
Solubility (Other)  Not available  Density  1.04 - 1.07
Physical Form  Liquid  Molecular Weight  Not available

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.

Chemical Stability
Stable under normal temperatures and pressures.

Possibility of Hazardous Reactions
Will not polymerize.

Conditions to Avoid
Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

Incompatible Materials
Strong acids, bases, oxidizers.

Hazardous decomposition products
Oxides of carbon and nitrogen.

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation
May be harmful if inhaled.

Skin Contact
May cause skin irritation.

Eye Contact
Causes serious eye irritation.

Ingestion
May be harmful if swallowed. May cause nausea, vomiting, drowsiness, coma, respiratory function failure, convulsions, metabolic disorders. Respiratory failure and cardiopulmonary arrest may occur. Renal damage may occur.
Acute and Chronic Toxicity

Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and the following selected endpoints are published:

**Triethylene glycol monoethyl ether (112-50-5)**
Oral LD50 Rat 7750 mg/kg; Dermal LD50 Rabbit 8.2 g/kg

**Polyethylene glycol (25322-68-3)**
Oral LD50 Rat 22 g/kg; Dermal LD50 Rabbit >20 g/kg

**Diethylene glycol monobutyl ether (112-34-5)**
Oral LD50 Rat 5660 mg/kg; Dermal LD50 Rabbit 2700 mg/kg

**Diethylene glycol (111-46-6)**
Oral LD50 Rat 12565 mg/kg; Dermal LD50 Rabbit 11890 mg/kg; Inhalation LC50 Rat >4600 mg/m3 4 h

**Diethylene glycol monoethyl ether (111-90-0)**
Oral LD50 Rat 10502 mg/kg; Dermal LD50 Rabbit 9143 mg/kg; Inhalation LC50 Rat >5240 mg/m3 4 h (no deaths occurred)

Product Toxicity Data

**Acute Toxicity Estimate**

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td>&gt; 2000 mg/kg</td>
</tr>
</tbody>
</table>

**Immediate Effects**
May be harmful if swallowed. Causes serious eye damage.

**Delayed Effects**
May cause damage to organs through prolonged or repeated exposure. May cause damage to the kidneys.

**Irritation/Corrosivity Data**
Causes serious eye irritation.

**Respiratory Sensitization**
No information available for the product.

**Dermal Sensitization**
No information available for the product.

**Component Carcinogenicity**
None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.

**Germ Cell Mutagenicity**
No information available for the product.

**Tumorigenic Data**
No information available for the product.

**Reproductive Toxicity**
No information available for the product.

**Specific Target Organ Toxicity - Single Exposure**
No target organs identified.

**Specific Target Organ Toxicity - Repeated Exposure**
Kidneys.

**Aspiration hazard**
No information available for the product.

**Medical Conditions Aggravated by Exposure**
No information available for the product.

**Additional Data**
No additional information is available.
### Section 12 - ECOLOGICAL INFORMATION

#### Component Analysis - Aquatic Toxicity

<table>
<thead>
<tr>
<th>Component Analysis</th>
<th>Aquatic Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diethylene glycol monobutyl ether</strong></td>
<td>112-34-5</td>
</tr>
<tr>
<td>Fish:</td>
<td>LC50 96 h Lepomis macrochirus 1300 mg/L [static]</td>
</tr>
<tr>
<td>Algae:</td>
<td>EC50 96 h Desmodesmus subspicatus &gt;100 mg/L IUCLID</td>
</tr>
<tr>
<td>Invertebrate:</td>
<td>EC50 48 h Daphnia magna &gt;100 mg/L IUCLID</td>
</tr>
<tr>
<td><strong>Diethylene glycol</strong></td>
<td>111-46-6</td>
</tr>
<tr>
<td>Fish:</td>
<td>LC50 96 h Pimephales promelas 75200 mg/L [flow-through]</td>
</tr>
<tr>
<td>Invertebrate:</td>
<td>EC50 48 h Daphnia magna 84000 mg/L IUCLID</td>
</tr>
<tr>
<td><strong>Diethylene glycol monoethyl ether</strong></td>
<td>111-90-0</td>
</tr>
<tr>
<td>Fish:</td>
<td>LC50 96 h Lepomis macrochirus 10000 mg/L [static]; LC50 96 h Lepomis macrochirus 19100 - 23900 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 11400 - 15700 mg/L [flow-through]; LC50 96 h Pimephales promelas 11600 - 16700 mg/L [flow-through]</td>
</tr>
<tr>
<td>Invertebrate:</td>
<td>EC50 48 h Daphnia magna 3940 - 4670 mg/L IUCLID</td>
</tr>
</tbody>
</table>

#### Persistence and Degradability

- No information available for the product.

#### Bioaccumulative Potential

- No information available for the product.

#### Mobility

- No information available for the product.

### Section 13 - DISPOSAL CONSIDERATIONS

#### Disposal Methods

Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Nissan regarding proper recycling or disposal.

### Section 14 - TRANSPORT INFORMATION

#### US DOT Information

Not regulated for transport.

#### IATA Information

Not regulated for transport.

#### IMDG Information

Not regulated for transport.

#### TDG Information

Not regulated for transport.

#### International Bulk Chemical Code

This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

<table>
<thead>
<tr>
<th>Polyethylene glycol</th>
<th>25322-68-3</th>
</tr>
</thead>
</table>
Section 15 - REGULATORY INFORMATION

**Canada Regulations**

**CEPA - Priority Substances List**
None of this product's components are on the list.

**Ozone Depleting Substances**
None of this product's components are on the list.

**Council of Ministers of the Environment - Soil Quality Guidelines**
None of this product's components are on the list.

**Council of Ministers of the Environment - Water Quality Guidelines**
None of this product's components are on the list.

**Further information**
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR. D2A, D2B.

**U.S. Federal Regulations**
None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

**SARA Section 311/312 (40 CFR 370 Subparts B and C) 2016 reporting categories**
- **Acute Health:** Yes
- **Chronic Health:** Yes
- **Fire:** No
- **Pressure:** No
- **Reactivity:** No

**Component Analysis - Inventory**

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<tr>
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</thead>
<tbody>
<tr>
<td>Triethylene glycol monoethyl ether (112-50-5); Diethylene glycol monobutyl ether (112-34-5); Diethylene glycol (111-46-6); Diethylene glycol monoethyl ether (111-90-0)</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<tbody>
<tr>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
Section 16 - OTHER INFORMATION

NFPA Ratings
Health: 2 Fire: 1 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Issue Date
New Issue SDS.

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC – European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) ; KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR’s Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne-Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic
Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

**Other Information**

**Disclaimer:**
User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Nissan assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to the information or the product to which the information refers. The data contained on this sheet apply to the product as supplied to the user.