



## Shell Brake and Clutch Fluid DOT3

### Recochem Inc. (PFX GROUP)

Chemwatch: 5327-69

Version No: 3.2

Safety Data Sheet according to WHMIS 2023 requirements

Initial Date: 09/12/2019

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S.GHS.CAN.EN.E

#### SECTION 1 Identification

##### Product Identifier

|                               |                                   |
|-------------------------------|-----------------------------------|
| Product name                  | Shell Brake and Clutch Fluid DOT3 |
| Chemical Name                 | Not Applicable                    |
| Synonyms                      | Product code: 24301               |
| Chemical formula              | Not Applicable                    |
| Other means of identification | Not Available                     |

##### Recommended use of the chemical and restrictions on use

|                          |  |
|--------------------------|--|
| Relevant identified uses | Hydraulic fluid for use in automotive brake and clutch systems.<br>Use according to manufacturer's directions. |
|--------------------------|--|

##### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

|                         |  |
|-------------------------|--|
| Registered company name | Recochem Inc. (PFX GROUP)                              |
| Address                 | 850 Montée de Liesse Saint-Laurent QC H4T 1P4 Canada   |
| Telephone               | 514-341-3550   |
| Fax                     | Not Available  |
| Website                 | <a href="http://www.recochem.com">www.recochem.com</a> |
| Email                   | TPerks@recochem.com                                    |

##### Emergency phone number

|                                     |                         |                                     |
|-------------------------------------|-------------------------|-------------------------------------|
| Association / Organisation          | CANUTEC                 | CHEMWATCH EMERGENCY RESPONSE (24/7) |
| Emergency telephone number(s)       | 613-996-6666 (24/7 365) | +1 867 670 2867 (ID#: 5327-69)      |
| Other emergency telephone number(s) | Not Available           | +61 3 9573 3188                     |

#### SECTION 2 Hazard(s) identification

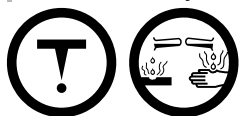
##### Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health, Red = Fire, Yellow = Reactivity and White = Special (Oxidizer or water reactive substances)



##### Canadian WHMIS Symbols



|                |  |
|----------------|--|
| Classification | Serious Eye Damage/Eye Irritation Category 1, Reproductive Toxicity Category 2 |
|----------------|--|

##### Label elements

## Shell Brake and Clutch Fluid DOT3

|                     |   |
|---------------------|---|
| Hazard pictogram(s) |   |
|---------------------|---|

|             |        |
|-------------|--------|
| Signal word | Danger |
|-------------|--------|

## Hazard statement(s)

|      |  |
|------|--|
| H318 | Causes serious eye damage.                           |
| H361 | Suspected of damaging fertility or the unborn child. |

## Physical and Health hazard(s) not otherwise classified

Not Applicable

## Precautionary statement(s) Prevention

|      |  |
|------|--|
| P280 | Wear protective gloves, protective clothing, eye protection and face protection. |
| P202 | Do not handle until all safety precautions have been read and understood.        |

## Precautionary statement(s) Response

|                |  |
|----------------|--|
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P313      | IF exposed or concerned: Get medical advice/ attention.  |
| P310           | Immediately call a POISON CENTER/doctor/physician/first aider.   |

## Precautionary statement(s) Storage

|      |                  |
|------|------------------|
| P405 | Store locked up. |
|------|------------------|

## Precautionary statement(s) Disposal

|      |  |
|------|--|
| P501 | Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation. |
|------|--|

No further product hazard information.

## SECTION 3 Composition / information on ingredients

## Substances

See section below for composition of Mixtures

## Mixtures

| CAS No   | %[weight] | Name   |
|----------|-----------|--|
| 143-22-6 | 20-45     | <a href="#">triethylene glycol monobutyl ether</a> |
| 111-46-6 | 10-25     | <a href="#">diethylene glycol</a>                  |
| 111-77-3 | 0-3       | <a href="#">diethylene glycol monomethyl ether</a> |
| 112-34-5 | 0-3       | <a href="#">diethylene glycol monobutyl ether</a>  |

## SECTION 4 First-aid measures

## Description of first aid measures

|              |  |
|--------------|--|
| Eye Contact  | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul> |
| Skin Contact | <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>   |
| Inhalation   | <ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>  |
| Ingestion    | <ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>  |

## Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5 Fire-fighting measures

## Extinguishing media

- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).

Continued...

## Shell Brake and Clutch Fluid DOT3

▶ Carbon dioxide.

## Special hazards arising from the substrate or mixture

|                             |  |
|-----------------------------|--|
| <b>Fire Incompatibility</b> | ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |
|-----------------------------|--|

## Special protective equipment and precautions for fire-fighters

|                              |  |
|------------------------------|--|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ Avoid spraying water onto liquid pools.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> </ul>   |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit toxic fumes of carbon monoxide (CO).</li> <li>▶ May emit acrid smoke.</li> <li>▶ Mists containing combustible materials may be explosive.</li> </ul> <p>Combustion products include:</p> <ul style="list-style-type: none"> <li>▶ carbon dioxide (CO<sub>2</sub>)</li> <li>▶ other pyrolysis products typical of burning organic material.</li> </ul> <p>May emit poisonous fumes.<br/>May emit corrosive fumes.</p> |

## SECTION 6 Accidental release measures

## Personal precautions, protective equipment and emergency procedures

See section 8

## Environmental precautions

See section 12

## Methods and material for containment and cleaning up

|                     |  |
|---------------------|--|
| <b>Minor Spills</b> | <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul> |
| <b>Major Spills</b> | <p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Increase ventilation.</li> </ul>                       |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

## Precautions for safe handling

|                          |  |
|--------------------------|--|
| <b>Safe handling</b>     | <p>The tendency of many ethers to form explosive peroxides is well documented. Ethers lacking non-methyl hydrogen atoms adjacent to the ether link are thought to be relatively safe</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT concentrate by evaporation, or evaporate extracts to dryness, as residues may contain explosive peroxides with DETONATION potential.</b></li> <li>▶ Any static discharge is also a source of hazard.</li> <li>▶ Before any distillation process remove trace peroxides by shaking with excess 5% aqueous ferrous sulfate solution or by percolation through a column of activated alumina.</li> <li>▶ Distillation results in uninhibited ether distillate with considerably increased hazard because of risk of peroxide formation on storage.</li> <li>▶ Add inhibitor to any distillate as required.</li> <li>▶ When solvents have been freed from peroxides by percolation through columns of activated alumina, the absorbed peroxides must promptly be desorbed by treatment with polar solvents such as methanol or water, which should then be disposed of safely.</li> </ul> <p>The substance accumulates peroxides which may become hazardous only if it evaporates or is distilled or otherwise treated to concentrate the peroxides. The substance may concentrate around the container opening for example.</p> <p>Purchases of peroxidisable chemicals should be restricted to ensure that the chemical is used completely before it can become peroxidised.</p> <ul style="list-style-type: none"> <li>▶ A responsible person should maintain an inventory of peroxidisable chemicals or annotate the general chemical inventory to indicate which chemicals are subject to peroxidation. An expiration date should be determined. The chemical should either be treated to remove peroxides or disposed of before this date.</li> <li>▶ The person or laboratory receiving the chemical should record a receipt date on the bottle.</li> <li>▶ Avoid skin contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ Avoid smoking, naked lights or ignition sources.</li> <li>▶ Avoid contact with incompatible materials.</li> </ul> |
| <b>Other information</b> | <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> <li>▶ Protect containers against physical damage and check regularly for leaks.</li> </ul>   |

Continued...

- ▶ Observe manufacturer's storage and handling recommendations contained within this SDS.

### Conditions for safe storage, including any incompatibilities

|                                |  |
|--------------------------------|--|
| <b>Suitable container</b>      | <ul style="list-style-type: none"> <li>▶ Metal can or drum</li> <li>▶ Packaging as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul> |
| <b>Storage incompatibility</b> | <ul style="list-style-type: none"> <li>▶ Avoid reaction with oxidising agents</li> </ul>   |

## SECTION 8 Exposure controls / personal protection


### Control parameters

#### Occupational Exposure Limits (OEL)

#### INGREDIENT DATA

| Source   | Ingredient                        | Material name   | TWA           | STEL          | Peak          | Notes  |
|--|-----------------------------------|---|---------------|---------------|---------------|--|
| Canada - Manitoba Occupational Exposure Limits                               | diethylene glycol monobutyl ether | Not Available   | 10 ppm        | Not Available | Not Available | TLV® Basis: Hematologic, liver & kidney eff                        |
| Canada - Prince Edward Island Occupational Exposure Limits                   | diethylene glycol monobutyl ether | Diethylene glycol monobutyl ether (Inhalable fraction and vapor)        | 10 ppm        | Not Available | Not Available | Not Available  |
| Canada - British Columbia Occupational Exposure Limits                       | diethylene glycol monobutyl ether | Diethylene glycol monobutyl ether                                       | Not Available | Not Available | Not Available | No British Columbia exposure limit at this time.                   |
| Canada - British Columbia Occupational Exposure Limits (French Canadian)     | diethylene glycol monobutyl ether | Monobutyl éther de diéthylène glycol                                    | Not Available | Not Available | Not Available | Aucune limite d'exposition en Colombie-Britannique pour le moment. |
| Canada - Manitoba Occupational Exposure Limits (French Canadian)             | diethylene glycol monobutyl ether | Éther monobutylique du diéthylène glycol                                | 10 ppm        | Not Available | Not Available | Base TLV® : effets hématologiques, hépatiques et rénaux            |
| Canada - Prince Edward Island Occupational Exposure Limits (French Canadian) | diethylene glycol monobutyl ether | Éther monobutylique de diéthylène glycol (fraction inhalable et vapeur) | 10 ppm        | Not Available | Not Available | Not Available  |

### Exposure controls

|  |  |
|--|--|
| <b>Appropriate engineering controls</b>                                      | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> |
| <b>Individual protection measures, such as personal protective equipment</b> |   |
| <b>Eye and face protection</b>   | <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable.</li> </ul>   |
| <b>Skin protection</b>   | See Hand protection below  |
| <b>Hands/feet protection</b>   | <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>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 moisturiser is recommended.</p> <ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul>                |
| <b>Body protection</b>   | See Other protection below   |
| <b>Other protection</b>  | <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C apron.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> <li>▶ Eye wash unit.</li> </ul>   |

### Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators

Continued...

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is considered appropriate.

- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

## SECTION 9 Physical and chemical properties

## Information on basic physical and chemical properties

|  |   |   |                |
|--|---|---|----------------|
| <b>Appearance/Colour</b>   | Clear colourless liquid with bland odour; miscible with water and ethanol. Colourless |   |                |
| <b>Physical state</b>  | Liquid  | <b>Relative density (Water = 1)</b>                                   | 1.01-1.06      |
| <b>Odour</b>   | Not Available   | <b>Partition coefficient n-octanol / water</b>                        | Not Available  |
| <b>Odour threshold</b>   | Not Available   | <b>Auto-ignition temperature (°C)</b>                                 | >300           |
| <b>pH (as supplied)</b>  | 7.0-10.0  | <b>Decomposition temperature (°C)</b>                                 | >300           |
| <b>Melting point / freezing point (°C)</b>                       | <-50  | <b>Viscosity (cSt)</b>  | Not Available  |
| <b>Initial boiling point and boiling range (°C)</b>              | >205  | <b>Molecular weight (g/mol)</b>                                       | Not Applicable |
| <b>Flash point (°C)</b>  | >93   | <b>Taste</b>  | Not Available  |
| <b>Evaporation rate</b>  | Not Applicable  | <b>Explosive properties</b>   | Not Available  |
| <b>Flammability</b>  | Not Applicable  | <b>Oxidising properties</b>   | Not Available  |
| <b>Upper Explosive Limit (%)</b>                                 | Not Available   | <b>Surface Tension (dyn/cm or mN/m)</b>                               | Not Available  |
| <b>Lower Explosive Limit (%)</b>                                 | Not Available   | <b>Volatile Component (%vol)</b>                                      | Not Available  |
| <b>Vapour pressure (kPa)</b>                                     | <0  | <b>Gas group</b>  | Not Available  |
| <b>Solubility in water</b>                                       | Miscible  | <b>pH as a solution (1%)</b>  | Not Available  |
| <b>Vapour density (Air = 1)</b>                                  | Not Available   | <b>VOC g/L</b>  | Not Available  |
| <b>Heat of Combustion (kJ/g)</b>                                 | Not Available   | <b>Ignition Distance (cm)</b>   | Not Available  |
| <b>Flame Height (cm)</b>   | Not Available   | <b>Flame Duration (s)</b>   | Not Available  |
| <b>Enclosed Space Ignition Time Equivalent (s/m<sup>3</sup>)</b> | Not Available   | <b>Enclosed Space Ignition Deflagration Density (g/m<sup>3</sup>)</b> | Not Available  |
| <b>Particle Characteristics</b>                                  | Not Available   |   |                |

## SECTION 10 Stability and reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                         | See section 7  |
| <b>Chemical stability</b>                 | <ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul> |
| <b>Possibility of hazardous reactions</b> | See section 7  |
| <b>Conditions to avoid</b>                | See section 7  |
| <b>Incompatible materials</b>             | See section 7  |
| <b>Hazardous decomposition products</b>   | See section 5  |

## SECTION 11 Toxicological information

## Information on toxicological effects

|   |  |
|---|--|
| <b>a) Acute Toxicity</b>                    | Based on available data, the classification criteria are not met.  |
| <b>b) Skin Irritation/Corrosion</b>         | Based on available data, the classification criteria are not met.  |
| <b>c) Serious Eye Damage/Irritation</b>     | There is sufficient evidence to classify this material as eye damaging or irritating   |
| <b>d) Respiratory or Skin sensitisation</b> | Based on available data, the classification criteria are not met.  |
| <b>e) Mutagenicity</b>                      | Based on available data, the classification criteria are not met.  |
| <b>f) Carcinogenicity</b>                   | Based on available data, the classification criteria are not met.  |
| <b>g) Reproductivity</b>                    | There is sufficient evidence to classify this material as toxic to reproductivity  |
| <b>h) STOT - Single Exposure</b>            | Based on available data, the classification criteria are not met.  |
| <b>i) STOT - Repeated Exposure</b>          | Based on available data, the classification criteria are not met.  |
| <b>j) Aspiration Hazard</b>                 | Based on available data, the classification criteria are not met.  |
| <b>Inhaled</b>                              | The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Inhalation hazard is increased at higher temperatures. |
| <b>Ingestion</b>                            | Accidental ingestion of the material may be damaging to the health of the individual.  |
| <b>Skin Contact</b>                         | The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.  |

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|                |  |
|----------------|--|
|                | Open cuts, abraded or irritated skin should not be exposed to this material<br>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.   |
| <b>Eye</b>     | If applied to the eyes, this material causes severe eye damage.  |
| <b>Chronic</b> | Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility.<br>Based on experience with animal studies, exposure to the material may result in toxic effects to the development of the foetus, at levels which do not cause significant toxic effects to the mother.<br>Some glycol esters and their ethers cause wasting of the testicles, reproductive changes, infertility and changes to kidney function. Shorter chain compounds are more dangerous. |

| Shell Brake and Clutch Fluid DOT3  | TOXICITY   | IRRITATION  |
|------------------------------------|--|---|
|                                    | Oral (Rat) LD50: >5000 mg/kg <sup>[2]</sup>                      | Not Available   |
| triethylene glycol monobutyl ether | TOXICITY   | IRRITATION  |
|                                    | Dermal (rabbit) LD50: 3051 mg/kg <sup>[2]</sup>                  | Eye (Rodent - rabbit): 20mg/24H - Moderate                      |
|                                    | Oral (Rat) LD50: 5300 mg/kg <sup>[2]</sup>                       | Eye (Rodent - rabbit): 50mg - Severe                            |
|                                    |  | Eye: adverse effect observed (irritating) <sup>[1]</sup>        |
|                                    |  | Skin (Rodent - rabbit): 10mg/24H - Mild                         |
|                                    | Skin (Rodent - rabbit): 500mg/24H - Mild                         |   |
|                                    | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |   |
| diethylene glycol                  | TOXICITY   | IRRITATION  |
|                                    | Dermal (rabbit) LD50: 11890 mg/kg <sup>[2]</sup>                 | Eye (Rodent - rabbit): 50mg - Mild                              |
|                                    | Inhalation (Rat) LC50: >4.6 mg/l4h <sup>[1]</sup>                | Eye: no adverse effect observed (not irritating) <sup>[1]</sup> |
|                                    | Oral (Rat) LD50: 12565 mg/kg <sup>[2]</sup>                      | Skin (Human): 112mg/3D (intermittent) - Mild                    |
|                                    | Skin (Rodent - rabbit): 500mg - Mild                             |   |
|                                    | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |   |
| diethylene glycol monomethyl ether | TOXICITY   | IRRITATION  |
|                                    | Dermal (rabbit) LD50: 2525 mg/kg <sup>[2]</sup>                  | Eye (Rodent - rabbit): 500mg - Moderate                         |
|                                    | Oral (Rat) LD50: 4040 mg/kg <sup>[2]</sup>                       | Eye (Rodent - rabbit): 500mg/24H - Mild                         |
|                                    | Eye: no adverse effect observed (not irritating) <sup>[1]</sup>  |   |
|                                    | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |   |
| diethylene glycol monobutyl ether  | TOXICITY   | IRRITATION  |
|                                    | Dermal (rabbit) LD50: 4120 mg/kg <sup>[2]</sup>                  | Eye (Rodent - rabbit): 20mg - Severe                            |
|                                    | Oral (Rat) LD50: 5660 mg/kg <sup>[2]</sup>                       | Eye (Rodent - rabbit): 20mg/24H - Moderate                      |
|                                    | Eye: adverse effect observed (irritating) <sup>[1]</sup>         |   |
|                                    | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |   |

**Legend:**

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

|   |   |
|---|---|
| <b>TRIETHYLENE GLYCOL MONOBUTYL ETHER</b>   | Tri-ethylene glycol ethers undergo enzymatic oxidation to toxic alkoxy acids. They may irritate the skin and the eyes. At high oral doses, they may cause depressed reflexes, flaccid muscle tone, breathing difficulty and coma. Death may result in experimental animal. However, repeated exposure may cause dose dependent damage to the kidneys as well as reproductive and developmental defects.   |
| <b>DIETHYLENE GLYCOL</b>  | Diglycolic acid is formed following the oxidation of accidentally ingested diethylene glycol in the body and can lead to severe complications with fatal outcome.   |
| <b>DIETHYLENE GLYCOL MONOMETHYL ETHER</b>   | The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.   |
| <b>TRIETHYLENE GLYCOL MONOBUTYL ETHER &amp; DIETHYLENE GLYCOL MONOBUTYL ETHER</b> | The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.  |
| <b>TRIETHYLENE GLYCOL MONOBUTYL ETHER &amp; DIETHYLENE GLYCOL</b>                 | The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.  |
| <b>DIETHYLENE GLYCOL MONOMETHYL ETHER &amp; DIETHYLENE GLYCOL MONOBUTYL ETHER</b> | This category includes diethylene glycol ethyl ether (DGEE), diethylene glycol propyl ether (DGPE) diethylene glycol butyl ether (DGBE) and diethylene glycol hexyl ether (DGHE) and their acetates. Studies show that they can cause kidney and liver damage, skin and eye irritation as well as blood changes but do not cause damage to the reproductive, genetic and developmental abnormalities, sensitisation or respiratory systems. However, DGEE is reported to cause sperm insufficiency. |

|  |   |                                 |   |
|--|---|---------------------------------|---|
| <b>Acute Toxicity</b>                    | ✗ | <b>Carcinogenicity</b>          | ✗ |
| <b>Skin Irritation/Corrosion</b>         | ✗ | <b>Reproductivity</b>           | ✓ |
| <b>Serious Eye Damage/Irritation</b>     | ✓ | <b>STOT - Single Exposure</b>   | ✗ |
| <b>Respiratory or Skin sensitisation</b> | ✗ | <b>STOT - Repeated Exposure</b> | ✗ |

## Shell Brake and Clutch Fluid DOT3

Mutagenicity X

Aspiration Hazard X

**Legend:** X – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## SECTION 12 Ecological information

## Toxicity

| Shell Brake and Clutch Fluid DOT3 | Endpoint      | Test Duration (hr) | Species       | Value         | Source        |
|-----------------------------------|---------------|--------------------|---------------|---------------|---------------|
|                                   | Not Available | Not Available      | Not Available | Not Available | Not Available |

| triethylene glycol monobutyl ether | Endpoint  | Test Duration (hr) | Species                       | Value      | Source |
|------------------------------------|-----------|--------------------|-------------------------------|------------|--------|
|                                    | EC50      | 72h                | Algae or other aquatic plants | >500mg/l   | 1      |
|                                    | EC50      | 48h                | Crustacea                     | >500mg/l   | 1      |
|                                    | NOEC(ECx) | 72h                | Algae or other aquatic plants | 62.5mg/l   | 2      |
|                                    | EC50      | 96h                | Algae or other aquatic plants | 744.74mg/l | 2      |
|                                    | LC50      | 96h                | Fish                          | 1350mg/l   | 1      |

| diethylene glycol | Endpoint  | Test Duration (hr) | Species                       | Value           | Source |
|-------------------|-----------|--------------------|-------------------------------|-----------------|--------|
|                   | EC50      | 72h                | Algae or other aquatic plants | >6500<13000mg/l | 2      |
|                   | EC50      | 48h                | Crustacea                     | >100mg/l        | 2      |
|                   | NOEC(ECx) | 192h               | Algae or other aquatic plants | 800mg/l         | 1      |
|                   | EC50      | 96h                | Algae or other aquatic plants | 4566mg/l        | 2      |

| diethylene glycol monomethyl ether | Endpoint | Test Duration (hr) | Species                       | Value     | Source |
|------------------------------------|----------|--------------------|-------------------------------|-----------|--------|
|                                    | EC50     | 72h                | Algae or other aquatic plants | >500mg/l  | 1      |
|                                    | EC50     | 48h                | Crustacea                     | >500mg/l  | 1      |
|                                    | EC0(ECx) | 48h                | Crustacea                     | 500mg/l   | 1      |
|                                    | EC50     | 96h                | Algae or other aquatic plants | >1000mg/l | 2      |

| diethylene glycol monobutyl ether | Endpoint  | Test Duration (hr) | Species                       | Value     | Source |
|-----------------------------------|-----------|--------------------|-------------------------------|-----------|--------|
|                                   | EC50      | 72h                | Algae or other aquatic plants | 1101mg/l  | 2      |
|                                   | EC50      | 48h                | Crustacea                     | >100mg/l  | 1      |
|                                   | NOEC(ECx) | 96h                | Algae or other aquatic plants | >=100mg/l | 1      |
|                                   | EC50      | 96h                | Algae or other aquatic plants | >100mg/l  | 1      |

| Legend: | Endpoint  | Test Duration (hr) | Species                       | Value     | Source |
|---------|-----------|--------------------|-------------------------------|-----------|--------|
|         | EC50      | 72h                | Algae or other aquatic plants | 1300mg/l  | 2      |
|         | EC50      | 48h                | Crustacea                     | >100mg/l  | 1      |
|         | NOEC(ECx) | 96h                | Algae or other aquatic plants | >=100mg/l | 1      |
|         | EC50      | 96h                | Algae or other aquatic plants | >100mg/l  | 1      |
|         | LC50      | 96h                | Fish                          | 1300mg/l  | 2      |

*Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. US EPA, Ecotox database - Aquatic Toxicity Data 4. ECETOC Aquatic Hazard Assessment Data 5. NITE (Japan) - Bioconcentration Data 6. METI (Japan) - Bioconcentration Data 7. Vendor Data*

DO NOT discharge into sewer or waterways.

## Persistence and degradability

| Ingredient                         | Persistence: Water/Soil | Persistence: Air |
|------------------------------------|-------------------------|------------------|
| triethylene glycol monobutyl ether | LOW                     | LOW              |
| diethylene glycol                  | LOW                     | LOW              |
| diethylene glycol monomethyl ether | LOW                     | LOW              |
| diethylene glycol monobutyl ether  | LOW                     | LOW              |

## Bioaccumulative potential

| Ingredient                         | Bioaccumulation     |
|------------------------------------|---------------------|
| triethylene glycol monobutyl ether | LOW (LogKOW = 0.02) |
| diethylene glycol                  | LOW (BCF = 180)     |
| diethylene glycol monomethyl ether | LOW (BCF = 0.18)    |
| diethylene glycol monobutyl ether  | LOW (BCF = 0.46)    |

## Mobility in soil

| Ingredient                         | Mobility           |
|------------------------------------|--------------------|
| triethylene glycol monobutyl ether | LOW (Log KOC = 10) |

Continued...

| Ingredient                         | Mobility           |
|------------------------------------|--------------------|
| diethylene glycol                  | HIGH (Log KOC = 1) |
| diethylene glycol monomethyl ether | HIGH (Log KOC = 1) |
| diethylene glycol monobutyl ether  | LOW (Log KOC = 10) |

### SECTION 13 Disposal considerations

#### Waste treatment methods

| Product / Packaging disposal |   |
|------------------------------|---|
|                              | <ul style="list-style-type: none"> <li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▶ Consult State Land Waste Authority for disposal.</li> <li>▶ Bury or incinerate residue at an approved site.</li> <li>▶ Recycle containers if possible, or dispose of in an authorised landfill.</li> </ul> |

### SECTION 14 Transport information

#### Labels Required

| Marine Pollutant |    |
|------------------|----|
|                  | NO |

Land transport (TDG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

#### 14.7. Maritime transport in bulk according to IMO instruments

##### 14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

##### 14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

| Product name                       | Group          |
|------------------------------------|----------------|
| triethylene glycol monobutyl ether | Not Applicable |
| diethylene glycol                  | Not Applicable |
| diethylene glycol monomethyl ether | Not Applicable |
| diethylene glycol monobutyl ether  | Not Applicable |

##### 14.7.3. Transport in bulk in accordance with the IGC Code

| Product name                       | Ship Type      |
|------------------------------------|----------------|
| triethylene glycol monobutyl ether | Not Applicable |
| diethylene glycol                  | Not Applicable |
| diethylene glycol monomethyl ether | Not Applicable |
| diethylene glycol monobutyl ether  | Not Applicable |

### SECTION 15 Regulatory information

#### Safety, health and environmental regulations / legislation specific for the substance or mixture

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

##### triethylene glycol monobutyl ether is found on the following regulatory lists

Canada Categorization decisions for all DSL substances  
Canada Domestic Substances List (DSL)

##### diethylene glycol is found on the following regulatory lists

Canada Categorization decisions for all DSL substances  
Canada Domestic Substances List (DSL)  
Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS

##### diethylene glycol monomethyl ether is found on the following regulatory lists

Canada Categorization decisions for all DSL substances  
Canada Domestic Substances List (DSL)  
Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS  
Chemical Footprint Project - Chemicals of High Concern List

##### diethylene glycol monobutyl ether is found on the following regulatory lists

Canada Categorization decisions for all DSL substances

Canada Domestic Substances List (DSL)

Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS

**Additional Regulatory Information**

Not Applicable

**National Inventory Status**

| National Inventory                                | Status  |
|---|---|
| Australia - AIIIC / Australia Non-Industrial Use  | Yes   |
| Canada - DSL                                      | Yes   |
| Canada - NDSL                                     | No (triethylene glycol monobutyl ether; diethylene glycol; diethylene glycol monomethyl ether; diethylene glycol monobutyl ether)   |
| China - IECSC                                     | Yes   |
| Europe - EINEC / ELINCS / NLP                     | Yes   |
| Japan - ENCS                                      | Yes   |
| Korea - KECI                                      | Yes   |
| New Zealand - NZIoC                               | Yes   |
| Philippines - PICCS                               | Yes   |
| USA - TSCA  | All chemical substances in this product have been designated as TSCA Inventory 'Active'   |
| Taiwan - TCSI                                     | Yes   |
| Mexico - INSQ                                     | No (triethylene glycol monobutyl ether)   |
| Vietnam - NCI                                     | Yes   |
| Russia - FBEPH                                    | Yes   |
| UAE - Control List (Banned/Restricted Substances) | No (triethylene glycol monobutyl ether; diethylene glycol; diethylene glycol monomethyl ether; diethylene glycol monobutyl ether)   |
| <b>Legend:</b>                                    | Yes = All CAS declared ingredients are on the inventory<br>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

**SECTION 16 Other information**

|                      |            |
|----------------------|------------|
| <b>Revision Date</b> | 06/05/2026 |
| <b>Initial Date</b>  | 09/12/2019 |

**SDS Version Summary**

| Version | Date of Update | Sections Updated  |
|---------|----------------|---|
| 3.1     | 10/07/2024     | Expiration. Review and Update   |
| 3.2     | 06/05/2026     | Identification of the substance / mixture and of the company / undertaking - Supplier Information |

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

**Definitions and abbreviations**

- ▶ PC - TWA: Permissible Concentration-Time Weighted Average
- ▶ PC - STEL: Permissible Concentration-Short Term Exposure Limit
- ▶ IARC: International Agency for Research on Cancer
- ▶ ACGIH: American Conference of Governmental Industrial Hygienists
- ▶ STEL: Short Term Exposure Limit
- ▶ TEEL: Temporary Emergency Exposure Limit,
- ▶ IDLH: Immediately Dangerous to Life or Health Concentrations
- ▶ ES: Exposure Standard
- ▶ OSF: Odour Safety Factor
- ▶ NOAEL: No Observed Adverse Effect Level
- ▶ LOAEL: Lowest Observed Adverse Effect Level
- ▶ TLV: Threshold Limit Value
- ▶ LOD: Limit Of Detection
- ▶ OTV: Odour Threshold Value
- ▶ BCF: BioConcentration Factors
- ▶ BEI: Biological Exposure Index
- ▶ DNEL: Derived No-Effect Level
- ▶ PNEC: Predicted no-effect concentration
- ▶ MARPOL: International Convention for the Prevention of Pollution from Ships
- ▶ IMSBC: International Maritime Solid Bulk Cargoes Code
- ▶ IGC: International Gas Carrier Code
- ▶ IBC: International Bulk Chemical Code
  
- ▶ AIIC: Australian Inventory of Industrial Chemicals
- ▶ DSL: Domestic Substances List
- ▶ NDSL: Non-Domestic Substances List
- ▶ IECSC: Inventory of Existing Chemical Substance in China
- ▶ EINECS: European Inventory of Existing Commercial chemical Substances
- ▶ ELINCS: European List of Notified Chemical Substances
- ▶ NLP: No-Longer Polymers

**Shell Brake and Clutch Fluid DOT3**

- ▶ ENCS: Existing and New Chemical Substances Inventory
- ▶ KECI: Korea Existing Chemicals Inventory
- ▶ NZIoC: New Zealand Inventory of Chemicals
- ▶ PICCS: Philippine Inventory of Chemicals and Chemical Substances
- ▶ TSCA: Toxic Substances Control Act
- ▶ TCSI: Taiwan Chemical Substance Inventory
- ▶ INSQ: Inventario Nacional de Sustancias Químicas
- ▶ NCI: National Chemical Inventory
- ▶ FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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