Conforms to EU Regulation 1907/2006/EC as amended. - SDSGHS_GB

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Trade name : Valvoline™ BRAKE & CLUTCH FLUID DOT 4

Product code : 883429

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use : BRAKE FLUID

| 1.3 Details of the supplier of the safety data sheet | 1.4 Emergency telephone number |
|---|---|
| Ellis Enterprises B.V., an affiliate of Valvoline<br>Wieldrechtseweg 39<br>3316 BG Dordrecht<br>Netherlands<br>+31 (0)78 654 3500 (in the Netherlands), or contact your local CSR contact person<br><br>SDS@valvoline.com | 00-800-825-8654 / 001-859-202-3865, or contact your local emergency telephone number at 112<br><br>**Product Information**<br>+31 (0)78 654 3500 (in the Netherlands), or contact your local CSR contact person |

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008)**

Reproductive toxicity, Category 2 H361d: Suspected of damaging the unborn child.

### 2.2 Label elements

UFI : UJQD-7SR2-Y006-3693

**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :

| | | | |
|---|---|---|---|
| Signal word | : | Warning | |
| Hazard statements | : | H361d | Suspected of damaging the unborn child. |
| Precautionary statements | : | P102 | Keep out of reach of children. |
| | | P101 | If medical advice is needed, have product container or label at hand. |
| | | **Prevention:** | |
| | | P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection. |
| | | P202 | Do not handle until all safety precautions have been read and understood. |
| | | **Storage:** | |
| | | P405 | Store locked up. |
| | | **Disposal:** | |
| | | P501 | Dispose of contents/ container to an approved waste disposal plant. |

Hazardous components which must be listed on the label:
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**Additional advice**
No information available.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

**Hazardous components**

| Chemical name | CAS-No.<br>EC-No.<br>Registration number | Classification (REGULATION (EC) No 1272/2008) | Concentration (%) |
|---|---|---|---|
| Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate | 30989-05-0<br>250-418-4<br>01-2119462824-33-xxxx | Repr.2; H361d | >= 10,00 - < 15,00 |
| Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol | 907-996-4<br>01-2119531322-53-xxxx | Eye Dam.1; H318 | >= 10,00 - < 15,00 |

| | | | |
|---|---|---|---|
| ESTER OF BORIC ACID | 71035-05-7<br>01-2120766655-42-xxxx | Acute Tox.4; H302 | >= 5,00 - < 10,00 |
| 2-(2-Butoxyethoxy)ethanol | 112-34-5<br>203-961-6<br>01-2119475104-44-xxxx | Eye Irrit.2; H319 | >= 2,50 - < 5,00 |
| 2,2' -Oxybisethanol | 111-46-6<br>203-872-2<br>01-2119457857-21-xxxx | Acute Tox.4; H302<br>STOT RE2; H373 | >= 1,00 - < 2,50 |
| 2-(2-methoxyethoxy)ethanol | 111-77-3<br>203-906-6<br>01-2119475100-52-xxxx | Repr.2; H361d | >= 0,50 - < 1,00 |
| 2,6-di-tert-Butyl-p-cresol | 128-37-0<br>204-881-4<br>01-2119565113-46-xxxx | Aquatic Acute1; H400<br>Aquatic Chronic1; H410 | >= 0,10 - < 0,25 |

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.

In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.

If swallowed : Obtain medical attention.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No symptoms known or expected.

Risks : Diglycol ethers may cause acidosis.
Suspected of damaging the unborn child.

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

Treatment : No hazards which require special first aid measures.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : High volume water jet

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : carbon dioxide and carbon monoxide

### 5.3 Advice for firefighters

| | | |
|---|---|---|
| Special protective equipment for firefighters | : | In the event of fire, wear self-contained breathing apparatus. |
| Specific extinguishing methods | : | Product is compatible with standard fire-fighting agents. |
| Further information | : | Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

| | | |
|---|---|---|
| Personal precautions | : | Use personal protective equipment.<br>Ensure adequate ventilation.<br>Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.<br>Comply with all applicable federal, state, and local regulations. |

### 6.2 Environmental precautions

| | | |
|---|---|---|
| Environmental precautions | : | Prevent product from entering drains.<br>Prevent further leakage or spillage if safe to do so.<br>If the product contaminates rivers and lakes or drains inform respective authorities. |

### 6.3 Methods and material for containment and cleaning up

| | | |
|---|---|---|
| Methods for cleaning up | : | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).<br>Keep in suitable, closed containers for disposal. |

### 6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

| | | |
|---|---|---|
| Advice on safe handling | : | Do not breathe vapours/dust.<br>Do not smoke.<br>Container hazardous when empty.<br>Avoid contact with skin and eyes.<br>Smoking, eating and drinking should be prohibited in the |

application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Observe label precautions.

Other data : No decomposition if stored and applied as directed.

### 7.3 Specific end use(s)

Specific use(s) : No data available

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Occupational Exposure Limits**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
|---|---|---|---|---|
| 2-(2-Butoxyethoxy)ethanol | 112-34-5 | STEL | 15 ppm<br>101,2 mg/m3 | 2006/15/EC |
| | | TWA | 10 ppm<br>67,5 mg/m3 | 2006/15/EC |
| | | TWA | 10 ppm<br>67,5 mg/m3 | GB EH40 |
| | | STEL | 15 ppm<br>101,2 mg/m3 | GB EH40 |
| 2,2' -Oxybisethanol | 111-46-6 | TWA | 23 ppm<br>101 mg/m3 | GB EH40 |
| 2-(2-methoxyethoxy)ethanol | 111-77-3 | TWA | 10 ppm<br>50,1 mg/m3 | 2006/15/EC |
| | | TWA | 10 ppm<br>50,1 mg/m3 | GB EH40 |

| | | | | |
|---|---|---|---|---|
| 2,6-di-tert-Butyl-p-cresol | 128-37-0 | TWA | 10 mg/m3 | GB EH40 |

### 8.2 Exposure controls

**Engineering measures**

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

**Personal protective equipment**

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : amber

Odour : characteristic

Odour Threshold : No data available

pH : 7 - 11

Melting point/freezing point : No data available

Initial boiling point and boiling range : 245 °C

Flash point : ca. 125 °C

| | | |
|---|---|---|
| Evaporation rate | : | No data available |
| Flammability (solid, gas) | : | No data available |
| Upper explosion limit / Upper flammability limit | : | No data available |
| Lower explosion limit / Lower flammability limit | : | No data available |
| Vapour pressure | : | No data available |
| Relative vapour density | : | No data available |
| Relative density | : | No data available |
| Density | : | ca. 1,05 g/cm3 |
| Solubility(ies) | | |
| Water solubility | : | soluble |
| Solubility in other solvents | : | No data available |
| Partition coefficient: n-octanol/water | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity | | |
| Viscosity, dynamic | : | No data available |
| Viscosity, kinematic | : | 14,6 mm2/s (20 °C) |
| Oxidizing properties | : | No data available |

### 9.2 Other information

| | | |
|---|---|---|
| Self-ignition | : | 350 °C |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No decomposition if stored and applied as directed.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : Product will not undergo hazardous polymerization.

### 10.4 Conditions to avoid

Conditions to avoid : excessive heat
Do not allow evaporation to dryness.

### 10.5 Incompatible materials

Materials to avoid : Acids
Alkaline earth metals
Bases
Strong oxidizing agents

### 10.6 Hazardous decomposition products

Hazardous decomposition products : No hazardous decomposition products are known.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation
Skin contact
Eye Contact
Ingestion

**Acute toxicity**

Not classified based on available information.

**Product:**

Acute oral toxicity :

Remarks: Ingestion of medications contaminated with diethylene glycol has caused kidney failure and death in humans. Products containing diethylene glycol should be considered toxic by ingestion.

Acute toxicity estimate : > 2.000 mg/kg
Method: Calculation method

Acute dermal toxicity : Remarks: Skin absorption of this material (or a component) may be increased through injured skin.

**Components:**

**Triethylene glycol monomethyl ether, borate:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat): > 2.000 mg/kg<br>Method: OECD Test Guideline 401<br>Assessment: No adverse effect has been observed in acute oral toxicity tests. |
| Acute dermal toxicity | : | LD50 (Rat): > 2.000 mg/kg<br>Method: OECD Test Guideline 402<br>Assessment: No adverse effect has been observed in acute dermal toxicity tests. |

**Components:**

**Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 : 2.630 mg/kg<br>Assessment: No adverse effect has been observed in acute oral toxicity tests. |
| Acute dermal toxicity | : | LD50 (Rabbit, male): 3.540 mg/kg<br>Assessment: No adverse effect has been observed in acute dermal toxicity tests. |

**Components:**

**ESTER OF BORIC ACID:**

| | | |
|---|---|---|
| Acute oral toxicity | : | Assessment: The component/mixture is classified as acute oral toxicity, category 4. |

**Components:**

**DIETHYLENE GLYCOL MONOBUTYL ETHER:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat): 3.305 mg/kg |
| Acute dermal toxicity | : | LD50 (Rabbit): 2.734 mg/kg |
| Acute toxicity (other routes of administration) | : | LD50 (Rat): 500 mg/kg<br>Application Route: Intraperitoneal |

**Components:**

**DIETHYLENE GLYCOL:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Human): Expected 1.120 mg/kg<br>Target Organs: Kidney |
| Acute inhalation toxicity | : | LC50 (Rat): > 4,6 mg/l |

| | | |
|---|---|---|
| | | Exposure time: 4 h<br>Test atmosphere: dust/mist<br>Assessment: No adverse effect has been observed in acute inhalation toxicity tests. |
| Acute dermal toxicity | : | LD50 (Rabbit): 13.300 mg/kg |

**Components:**

**DIETHYLENE GLYCOL MONOMETHYL ETHER:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Mouse): > 5.288 mg/kg<br>Method: OECD Test Guideline 401<br>GLP: no |
| Acute inhalation toxicity | : | LC0 (Rat): > 1,2 mg/l<br>Exposure time: 6 h<br>Test atmosphere: vapour<br>Method: OECD Test Guideline 403 |
| Acute dermal toxicity | : | LD50 (Rabbit): 9.404 mg/kg<br>Method: OECD Test Guideline 402 |

**Components:**

**BUTYLATED HYDROXY TOLUENE:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat): > 6.000 mg/kg<br>Method: OECD Test Guideline 401<br>GLP: yes |
| Acute dermal toxicity | : | LD50 (Rat): > 2.000 mg/kg<br>Assessment: Not classified as acutely toxic by dermal absorption under GHS.<br>Remarks: No mortality observed at this dose. |

**Skin corrosion/irritation**

Not classified based on available information.

**Components:**

**Triethylene glycol monomethyl ether, borate:**

Result: No skin irritation

**Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol:**

Result: No skin irritation

**DIETHYLENE GLYCOL MONOBUTYL ETHER:**

Result: Slight, transient irritation

**DIETHYLENE GLYCOL:**

Species: Human
Result: Slight, transient irritation

**DIETHYLENE GLYCOL MONOMETHYL ETHER:**

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

**BUTYLATED HYDROXY TOLUENE:**

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:**

**Triethylene glycol monomethyl ether, borate:**

Result: Slight, transient irritation

**Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol:**

Result: Corrosive

**DIETHYLENE GLYCOL MONOBUTYL ETHER:**

Result: Severely irritating to eyes

**DIETHYLENE GLYCOL:**

Species: Rabbit
Result: Slight, transient irritation

**DIETHYLENE GLYCOL MONOMETHYL ETHER:**

Species: Rabbit
Method: OECD Test Guideline 405
Result: Slight, transient irritation

**BUTYLATED HYDROXY TOLUENE:**

Species: Rabbit
Method: OECD Test Guideline 405
Result: Slight, transient irritation

**Respiratory or skin sensitisation**

Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

**Components:**

**Triethylene glycol monomethyl ether, borate:**

Test Type: Maximisation Test

Species: Guinea pig
Assessment: Does not cause skin sensitisation.
Method: OECD Test Guideline 406

**DIETHYLENE GLYCOL MONOBUTYL ETHER:**

Test Type: Maximisation Test
Species: Guinea pig

**DIETHYLENE GLYCOL:**

Test Type: Maximisation Test
Species: Guinea pig
Method: Directive 67/548/EEC, Annex V, B.6.

**DIETHYLENE GLYCOL MONOMETHYL ETHER:**

Test Type: Maximisation Test
Species: Guinea pig
Assessment: Does not cause skin sensitisation.
Method: OECD Test Guideline 406

**BUTYLATED HYDROXY TOLUENE:**

Assessment: Does not cause skin sensitisation.

**Germ cell mutagenicity**

Not classified based on available information.

**Components:**

**Triethylene glycol monomethyl ether, borate:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Ames test<br>Test species: Salmonella typhimurium<br>Metabolic activation: with and without metabolic activation<br>Result: negative |

**DIETHYLENE GLYCOL MONOBUTYL ETHER:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Remarks: In vitro tests did not show mutagenic effects |
| Genotoxicity in vivo | : | Result: In vivo tests did not show mutagenic effects |

**DIETHYLENE GLYCOL:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Ames test<br>Metabolic activation: with and without metabolic activation<br>Method: OECD Test Guideline 471<br>Result: negative<br>GLP: yes |
| | : | Test species: Chinese hamster ovary cells<br>Metabolic activation: with and without metabolic activation<br>Method: OECD Test Guideline 479 |

| | | |
|---|---|---|
| | | Result: negative<br>GLP: yes |
| Genotoxicity in vivo | : | Test Type: In vivo micronucleus test<br>Test species: Mouse<br>Method: OECD Test Guideline 474<br>Result: negative<br>GLP: yes |

**DIETHYLENE GLYCOL MONOMETHYL ETHER:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Ames test<br>Test species: Salmonella typhimurium<br>Metabolic activation: with and without metabolic activation<br>Method: OECD Test Guideline 471<br>Result: negative |

**BUTYLATED HYDROXY TOLUENE:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Ames test<br>Test species: Salmonella typhimurium<br>Metabolic activation: with and without metabolic activation<br>Result: negative |

**Carcinogenicity**

Not classified based on available information.

**Reproductive toxicity**

Suspected of damaging the unborn child.

**Components:**

**Triethylene glycol monomethyl ether, borate:**

| | | |
|---|---|---|
| Reproductive toxicity - Assessment | : | Some evidence of adverse effects on development, based on animal experiments. |

**DIETHYLENE GLYCOL MONOBUTYL ETHER:**

| | | |
|---|---|---|
| Effects on fertility | : | Symptoms: No effects on fertility |

**DIETHYLENE GLYCOL MONOMETHYL ETHER:**

| | | |
|---|---|---|
| Reproductive toxicity - Assessment | : | Some evidence of adverse effects on development, based on animal experiments. |

**STOT - single exposure**

Not classified based on available information.

**STOT - repeated exposure**

Not classified based on available information.

**Components:**

**DIETHYLENE GLYCOL:**

Exposure routes: Ingestion
Target Organs: Kidney
Assessment: May cause damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity**

**Components:**

**DIETHYLENE GLYCOL MONOBUTYL ETHER:**

NOAEL: 250 mg/kg
LOAEL: 1.000 mg/kg
Application Route: Oral
Target Organs: Blood

**Aspiration toxicity**

Not classified based on available information.

**Experience with human exposure**

**Components:**

**DIETHYLENE GLYCOL:**

General Information: Liver

**Further information**

**Product:**

Remarks: No data available

## SECTION 12: Ecological information

### 12.1 Toxicity

**Components:**

Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203

| | | |
|---|---|---|
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): > 211,2 mg/l<br>Exposure time: 48 h<br>Test Type: static test<br>Method: OECD Test Guideline 202 |
| Toxicity to algae | : | EC50 (Pseudokirchneriella subcapitata (algae)): > 100 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201 |

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 : > 1.800 mg/l<br>Exposure time: 96 h<br>Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): > 3.200 mg/l<br>Exposure time: 48 h<br>Method: OECD Test Guideline 202 |
| Toxicity to algae | : | EC50 : 391 mg/l<br>Exposure time: 72 h |

2-(2-Butoxyethoxy)ethanol

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Bluegill (Lepomis macrochirus)): 1.300 mg/l<br>Exposure time: 96 h<br>Test Type: static test |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): > 100 mg/l<br>Exposure time: 48 h<br>Test Type: static test |
| Toxicity to algae | : | EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l<br>Exposure time: 96 h<br>Test Type: static test |
| Toxicity to bacteria | : | EC50 (Bacteria): > 100 mg/l<br>Exposure time: 96 h<br>Test Type: Static |

2,2' -Oxybisethanol

| | | |
|---|---|---|
| Toxicity to daphnia and other aquatic invertebrates | : | LC50 (Daphnia magna (Water flea)): > 10.000 mg/l<br>Exposure time: 24 h<br>Test Type: static test<br>Method: DIN 38412 |

2-(2-methoxyethoxy)ethanol

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Pimephales promelas (fathead minnow)): 5.741 mg/l<br>Exposure time: 96 h<br>Test Type: static test |

| | | |
|---|---|---|
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 1.192 mg/l<br>Exposure time: 48 h<br>Test Type: static test |
| Toxicity to algae | : | EC50 (Pseudokirchneriella subcapitata (green algae)): > 1.000 mg/l<br>End point: Biomass<br>Exposure time: 96 h<br>Test Type: static test<br>Method: OECD Test Guideline 201 |

2,6-di-tert-Butyl-p-cresol

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Fish): estimated 0,199 mg/l<br>Exposure time: 96 h<br>Remarks: QSAR |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 0,48 mg/l<br>Exposure time: 48 h<br>Test Type: static test<br>Method: OECD Test Guideline 202 |
| M-Factor (Short-term (acute) aquatic hazard) | : | 1 |
| Toxicity to fish (Chronic toxicity) | : | NOEC: 0,053 mg/l<br>Exposure time: 42 d<br>Species: Oryzias latipes (Orange-red killifish)<br>Test Type: flow-through test |
| M-Factor (Long-term (chronic) aquatic hazard) | : | 1 |

**12.2 Persistence and degradability**

**Components:**

Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate

| | | |
|---|---|---|
| Biodegradability | : | Result: Readily biodegradable.<br>Biodegradation: > 70 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301A |

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

| | | |
|---|---|---|
| Biodegradability | : | Result: Readily biodegradable. |

2-(2-Butoxyethoxy)ethanol

| | | |
|---|---|---|
| Biodegradability | : | Biodegradation: 89 % |

| | | |
|---|---|---|
| | | Exposure time: 28 d<br>Method: OECD Test Guideline 301C<br>Remarks: Readily biodegradable |

2,2' -Oxybisethanol

| | | |
|---|---|---|
| Biodegradability | : | Result: Readily biodegradable.<br>Biodegradation: 70 - 80 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301B |

2-(2-methoxyethoxy)ethanol

| | | |
|---|---|---|
| Biodegradability | : | Test Type: aerobic<br>Inoculum: activated sludge<br>Result: Readily biodegradable.<br>Biodegradation: 100 %<br>Exposure time: 28 d |

2,6-di-tert-Butyl-p-cresol

| | | |
|---|---|---|
| Biodegradability | : | Result: Not readily biodegradable.<br>Biodegradation: 4,5 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301C |
| Physico-chemical removability | : | Remarks: The product can be degraded by abiotic (e.g. chemical or photolytic) processes. |

**12.3 Bioaccumulative potential**

**Components:**

Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | log Pow: 1,6 (25 °C) |

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | log Pow: 0,5 (25 °C) |

2-(2-Butoxyethoxy)ethanol

| | | |
|---|---|---|
| Bioaccumulation | : | Remarks: Bioaccumulation is unlikely. |
| Partition coefficient: n-octanol/water | : | log Pow: 1 |

2,2' -Oxybisethanol

| | | |
|---|---|---|
| Bioaccumulation | : | Species: Leuciscus idus (Golden orfe)<br>Bioconcentration factor (BCF): 100 |

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | log Pow: -1,47 |

2,6-di-tert-Butyl-p-cresol

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | log Pow: 4,17 (21 °C) |

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

**Product:**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

### 12.6 Other adverse effects

**Product:**

Additional ecological information : No data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

## SECTION 14: Transport information

### 14.1 UN number

Not regulated as a dangerous good

**14.2 UN proper shipping name**

Not regulated as a dangerous good

**14.3 Transport hazard class(es)**

Not regulated as a dangerous good

**14.4 Packing group**

Not regulated as a dangerous good

**14.5 Environmental hazards**

Not regulated as a dangerous good

**14.6 Special precautions for user**

Not applicable

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable for product as supplied.

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

## SECTION 15: Regulatory information

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

| | | |
|---|---|---|
| Regulation (EC) No 1005/2009 on substances that deplete the ozone layer | : | Not applicable |
| Regulation (EC) No 850/2004 on persistent organic pollutants | : | Not applicable |
| REACH - List of substances subject to authorisation (Annex XIV) | : | Not applicable |
| REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). | : | Not applicable |
| Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals | : | Not applicable |

| | | |
|---|---|---|
| REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) | : | Conditions of restriction for the following entries should be considered:<br>111-77-3 (Number on list 54) |

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

| | | |
|---|---|---|
| Volatile organic compounds | : | Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)<br>Volatile organic compounds (VOC) content: 3,9 % |

**Other regulations:**

Pregnant women may only work with or be exposed to this product if, based on a risk assessment in the context of the activities and risk management measures taken, the exposure will not lead to any injury for mother and/or child (Maternity Protection Directive 92/85/EC as amended).

**The components of this product are reported in the following inventories:**

| | | |
|---|---|---|
| DSL | : | This product contains one or several components that are not on the Canadian DSL and have annual quantity limits. |
| AICS | : | Not in compliance with the inventory |
| ENCS | : | Not in compliance with the inventory |
| KECI | : | Not in compliance with the inventory |
| PICCS | : | Not in compliance with the inventory |
| IECSC | : | Not in compliance with the inventory |
| TCSI | : | Not in compliance with the inventory |
| TSCA | : | Not On TSCA Inventory |

**Inventories**
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

**15.2 Chemical safety assessment**

No data available

## SECTION 16: Other information

**Further information**
Internal information : 000000273236

**Full text of H-Statements**

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H361d | Suspected of damaging the unborn child. |
| H373 | May cause damage to organs through prolonged or repeated exposure if swallowed. |
| **H400** | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Other information : The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Valvoline's Environmental Health and Safety Department ('+31 (0)78 654 3500).

Sources of key data used to compile the Safety Data Sheet
Valvoline internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :
ACGIH : American Conference of Industrial Hygienists

BEI : Biological Exposure Index
CAS : Chemical Abstracts Service (Division of the American Chemical Society).
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
FG : Food grade
GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement : Hazard Statement
IATA : International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the “International Air Transport Association” (IATA).
ICAO : International Civil Aviation Organization
ICAO-TI (ICAO) : Technical Instructions by the “International Civil Aviation Organization”
IMDG : International Maritime Code for Dangerous Goods
ISO : International Organization for Standardization
logPow : octanol-water partition coefficient
LCxx : Lethal Concentration, for xx percent of test population
LDxx : Lethal Dose, for xx percent of test population.
ICxx : Inhibitory Concentration for xx of a substance
Ecxx : Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD : Organization for Economic Co-operation and Development
OEL : Occupational Exposure Limit
P-Statement : Precautionary Statement
PBT : Persistent , Bioaccumulative and Toxic
PPE : Personal Protective Equipment
STEL : Short-term exposure limit
STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value
TWA : Time-weighted average
vPvB : Very Persistent and Very Bioaccumulative
WEL : Workplace Exposure Level

ABM : Water Hazard Class for the Netherlands
ADR : Agreement concerning the International Carriage of Dangerous Goods by Road.
ADNR: Regulation for the Carriage of Dangerous Substances on the Rhine
CLP : Classification, Labelling and Packaging
CSA : Chemical Safety Assessment
CSR : Chemical Safety Report
DNEL : Derived No Effect Level.
EINECS : European Inventory of Existing Commercial Chemical Substances.
ELINCS : European List of Notified Chemical Substances
PEC : Predicted Effect Concentration
PEL : Permissible Exposure Limits
PNEC : Predicted No Effect Concentration
R-phrase : Risk phrase
REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals
RID : Regulation Concerning the International Transport of Dangerous Goods by Rail
S-phrase: Safety phrase
WGK : German Water Hazard Class