



# SAFETY DATA SHEET

Valvoline™ BRAKE & CLUTCH FLUID DOT 4

Version: 4.0

Revision Date: 11.03.2020

Print Date: 30/07/2020

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 : 883461

### 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

Ellis Enterprises B.V., an affiliate of Valvoline  
Wieldrechtseweg 39  
3316 BG Dordrecht  
Netherlands  
+31 (0)78 654 3500 (in the Netherlands), or  
contact your local CSR contact person

SDS@valvoline.com

### 1.4 Emergency telephone number

00-800-825-8654 / 001-859-202-3865, or contact  
your local emergency telephone number at 112

### Product Information

+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 :





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Signal word	:	Warning	
Hazard statements	:	H361d	Suspected of damaging the unborn child.
Precautionary statements	:	P102 P101	Keep out of reach of children. If medical advice is needed, have product container or label at hand.
		<b>Prevention:</b> 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.
		<b>Storage:</b> P405	Store locked up.
		<b>Disposal:</b> 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. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	30989-05-0 250-418-4 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 01-2119531322-53-xxxx	Eye Dam.1; H318	>= 10,00 - < 15,00



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



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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.

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### 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 (CO<sub>2</sub>)  
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



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## 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.
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## SECTION 6: Accidental release measures

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

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

### 6.2 Environmental precautions

- Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
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).  
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.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- Advice on safe handling : Do not breathe vapours/dust.  
Do not smoke.  
Container hazardous when empty.  
Avoid contact with skin and eyes.  
Smoking, eating and drinking should be prohibited in the
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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 101,2 mg/m <sup>3</sup>	2006/15/EC
		TWA	10 ppm 67,5 mg/m <sup>3</sup>	2006/15/EC
		TWA	10 ppm 67,5 mg/m <sup>3</sup>	GB EH40
		STEL	15 ppm 101,2 mg/m <sup>3</sup>	GB EH40
2,2'-Oxybisethanol	111-46-6	TWA	23 ppm 101 mg/m <sup>3</sup>	GB EH40
2-(2-methoxyethoxy)ethanol	111-77-3	TWA	10 ppm 50,1 mg/m <sup>3</sup>	2006/15/EC
		TWA	10 ppm 50,1 mg/m <sup>3</sup>	GB EH40



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2,6-di-tert-Butyl-p-cresol	128-37-0	TWA	10 mg/m <sup>3</sup>	GB EH40
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## 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



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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/cm <sup>3</sup>
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 mm <sup>2</sup> /s (20 °C)
Oxidizing properties	:	No data available

## 9.2 Other information

Self-ignition : 350 °C

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No decomposition if stored and applied as directed.





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## 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.

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## 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.



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## Components:

### **Triethylene glycol monomethyl ether, borate:**

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

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

Acute dermal toxicity : LD50 (Rabbit, male): 3.540 mg/kg  
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  
Application Route: Intraperitoneal

## Components:

### **DIETHYLENE GLYCOL:**

Acute oral toxicity : LD50 (Human): Expected 1.120 mg/kg  
Target Organs: Kidney

Acute inhalation toxicity : LC50 (Rat): > 4,6 mg/l



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Exposure time: 4 h  
Test atmosphere: dust/mist  
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  
Method: OECD Test Guideline 401  
GLP: no

Acute inhalation toxicity : LC0 (Rat): > 1,2 mg/l  
Exposure time: 6 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): 9.404 mg/kg  
Method: OECD Test Guideline 402

### Components:

#### **BUTYLATED HYDROXY TOLUENE:**

Acute oral toxicity : LD50 (Rat): > 6.000 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg  
Assessment: Not classified as acutely toxic by dermal absorption under GHS.  
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:**



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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**



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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**  
Test species: **Salmonella typhimurium**  
Metabolic activation: **with and without metabolic activation**  
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**  
Metabolic activation: **with and without metabolic activation**  
Method: **OECD Test Guideline 471**  
Result: **negative**  
GLP: **yes**

: Test species: **Chinese hamster ovary cells**  
Metabolic activation: **with and without metabolic activation**  
Method: **OECD Test Guideline 479**



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Genotoxicity in vivo : Result: **negative**  
GLP: **yes**  
: Test Type: **In vivo micronucleus test**  
Test species: **Mouse**  
Method: **OECD Test Guideline 474**  
Result: **negative**  
GLP: **yes**

**DIETHYLENE GLYCOL MONOMETHYL ETHER:**

Genotoxicity in vitro : Test Type: **Ames test**  
Test species: **Salmonella typhimurium**  
Metabolic activation: **with and without metabolic activation**  
Method: **OECD Test Guideline 471**  
Result: **negative**

**BUTYLATED HYDROXY TOLUENE:**

Genotoxicity in vitro : Test Type: **Ames test**  
Test species: **Salmonella typhimurium**  
Metabolic activation: **with and without metabolic activation**  
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.



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## 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

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## 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**



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Toxicity to daphnia and other aquatic invertebrates : **EC50 (Daphnia magna (Water flea)): > 211,2 mg/l**  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202

Toxicity to algae : **EC50 (Pseudokirchneriella subcapitata (algae)): > 100 mg/l**  
Exposure time: 72 h  
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**  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : **EC50 (Daphnia magna (Water flea)): > 3.200 mg/l**  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae : **EC50 : 391 mg/l**  
Exposure time: 72 h

2-(2-Butoxyethoxy)ethanol

Toxicity to fish : **LC50 (Bluegill (Lepomis macrochirus)): 1.300 mg/l**  
Exposure time: 96 h  
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : **EC50 (Daphnia magna (Water flea)): > 100 mg/l**  
Exposure time: 48 h  
Test Type: static test

Toxicity to algae : **EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l**  
Exposure time: 96 h  
Test Type: static test

Toxicity to bacteria : **EC50 (Bacteria): > 100 mg/l**  
Exposure time: 96 h  
Test Type: Static

2,2' -Oxybisethanol

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

2-(2-methoxyethoxy)ethanol

Toxicity to fish : **LC50 (Pimephales promelas (fathead minnow)): 5.741 mg/l**  
Exposure time: 96 h  
Test Type: static test





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Toxicity to daphnia and other aquatic invertebrates : **EC50 (Daphnia magna (Water flea)): 1.192 mg/l**  
Exposure time: 48 h  
Test Type: static test

Toxicity to algae : **EC50 (Pseudokirchneriella subcapitata (green algae)): > 1.000 mg/l**  
End point: Biomass  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 201

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

Toxicity to fish : **LC50 (Fish): estimated 0,199 mg/l**  
Exposure time: 96 h  
Remarks: QSAR

Toxicity to daphnia and other aquatic invertebrates : **EC50 (Daphnia magna (Water flea)): 0,48 mg/l**  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202

M-Factor (Short-term (acute) aquatic hazard) : 1

Toxicity to fish (Chronic toxicity) : **NOEC: 0,053 mg/l**  
Exposure time: 42 d  
Species: **Oryzias latipes (Orange-red killifish)**  
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.**  
Biodegradation: > 70 %  
Exposure time: 28 d  
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 %**



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	Exposure time: 28 d Method: OECD Test Guideline 301C Remarks: Readily biodegradable
2,2' -Oxybisethanol	
Biodegradability	: Result: Readily biodegradable. Biodegradation: 70 - 80 % Exposure time: 28 d Method: OECD Test Guideline 301B
2-(2-methoxyethoxy)ethanol	
Biodegradability	: Test Type: aerobic Inoculum: activated sludge Result: Readily biodegradable. Biodegradation: 100 % Exposure time: 28 d
2,6-di-tert-Butyl-p-cresol	
Biodegradability	: Result: Not readily biodegradable. Biodegradation: 4,5 % Exposure time: 28 d 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)  
Bioconcentration factor (BCF): 100



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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

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## 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.

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## SECTION 14: Transport information

### 14.1 UN number

Not regulated as a dangerous good



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## 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.

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## 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



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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:  
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)  
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



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## Inventories

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

## 15.2 Chemical safety assessment

No data available

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## 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.
<b>H400</b>	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



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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



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