

**Brake Fluid DOT 4**

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) &amp; 2020/878

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifier**

Product Name Brake Fluid DOT 4  
Product code 0184, 1746, 1803, 1804, 1822, 1833, 1618, 1633  
Unique Formula Identifier (UFI) 9TG0-00PW-P00M-4KUP

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

Identified Use(s) Hydraulic Fluid.  
Uses Advised Against Not known.

**1.3 Details of the supplier of the safety data sheet****Manufacturer**

Company Identification Granville Oil & Chemicals Ltd.  
Address of Manufacturer 29 Goldthorpe Ind. Est.,  
Goldthorpe,  
Rotherham,  
South Yorkshire,

Postal code S63 9BL  
Telephone: +44 (0)1709 890099  
Fax Not known.  
E-mail lab@granvilleoil.com  
Office hours 08:00 - 17:00

**Responsible Person**

Company Identification Veedol Deutschland GmbH.  
Address of Responsible Person Hans-Böckler-Straße 10  
Langenfeld,  
Germany

Postal code 40764  
Telephone: +49 (0) 2173 893 30 30  
Fax Not known.  
E-mail lab@granvilleoil.com

**1.4 Emergency telephone number**

Emergency Phone No. +44 (0)1709 890099  
Contact Granville Lab

**SECTION 2: HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture**

Regulation (EC) No. 1272/2008 (CLP) Eye Irrit. 2 :Causes serious eye irritation.  
Repr. 2; H361d, Suspected of damaging the unborn child.

**2.2 Label elements**

According to Regulation (EC) No. 1272/2008 (CLP)

**Brake Fluid DOT 4**

Product Name Brake Fluid DOT 4  
 Contains tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate. 2-(2-methoxyethoxy)ethanol diethylene glycol monomethyl ether. 2-[2-(2-butoxyethoxy)ethoxy]ethanol TEGBE triethylene glycol monobutyl ether butoxytriethylene glycol

## Hazard Pictogram(s)



GHS08



GHS07

Signal Word(s) Warning.

Hazard Statement(s) H319: Causes serious eye irritation.  
H361d, Suspected of damaging the unborn child.

Precautionary Statement(s) P101, If medical advice is needed, have product container or label at hand.  
P102, Keep out of reach of children  
P264, Wash hands/exposed areas thoroughly after handling.  
P301+P310, IF SWALLOWED: Immediately call a POISON CENTER/doctor.  
P337+P313, If eye irritation persists: Get medical advice/attention.  
P305+P351+P338, IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
P501, Dispose of contents/container to an approved waste disposal plant.

Unique Formula Identifier (UFI) 9TG0-00PW-P00M-4KUP

**2.3 Other hazards**

None Known.

**2.4 Additional Information**

For the full text of the Hazard-Statements mentioned in this Section, see Section 16

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS****3.1 Substances**

Not applicable.

**3.2 Mixtures**

HAZARDOUS INGREDIENT(S)	CAS No.	EC No. / REACH Registration No.	%W/W	Hazard Statement(s)	Hazard Pictogram(s)
2-[2-(2-butoxyethoxy)ethoxy]ethanol TEGBE triethylene glycol monobutyl ether butoxytriethylene glycol	143-22-6	205-592-6	20-29.9	Eye Dam. 1 H318	GHS05



**Brake Fluid DOT 4**

2,2' -oxybisethanol diethylene glycol	111-46-6	203-872-2	15-24	Acute Tox. 4 H302	GHS07
tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	30989-05-0	250-418-4	5 - 20	Repr. 2 H361d	GHS08
?, Polyethylene glycol butyl ether	9004-77-7	500-012-0	8-10	Eye Irrit. 2 H319	GHS07
2-(2-butoxyethoxy)ethanol diethylene glycol monobutyl ether	112-34-5	203-961-6	0-2.99	Eye Irrit. 2 H319	GHS07
2-(2-methoxyethoxy)ethanol diethylene glycol monomethyl ether	111-77-3	203-906-6	0-2.99	Repr. 2 H361d	GHS08

HAZARDOUS INGREDIENT(S)	CAS No.	Specific Concentration Limit		M-factor	ATE
2-[2-(2-butoxyethoxy)ethoxy]ethanol TEGBE triethylene glycol monobutyl ether butoxytriethylene glycol	143-22-6	Eye Dam. 1	C>= 30.00 <= 100.00		
		Eye Irrit. 2	C>= 20.00 < 30.00		
2,2' -oxybisethanol diethylene glycol	111-46-6				Acute Tox. 4 (H302) :500.000

Contains no non-classified vPvB substances.

Contains no non-classified substances with a Union workplace exposure limit.

For full text of H/P Statements see section 16.

**SECTION 4: FIRST AID MEASURES**

**4.1 Description of first aid measures**

Inhalation	Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her. If recovery is not rapid, seek medical attention
Skin Contact	Immediately remove contaminated clothing and shoes. Ensure that skin, which has been exposed to the material, is washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.
Eye Contact	Remove contact lenses. Flush eyes immediately with plenty of water or isotonic water (20-30°C) for at least 5 minutes and continue until irritation stops. Make sure to flush under upper and lower eyelids. If irritation continues, contact a doctor. Continue flushing during transport.
Ingestion	Provide plenty of water for the person to drink and stay with him/her. Seek medical advice immediately and bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the victim lean forward with head down to avoid inhalation of- or choking on vomited material.



## Brake Fluid DOT 4

If medical attention is delayed, give adults 90-120 ml hard liquor such as 40% v/v spirits. Give children proportionately less at a rate of 2ml/kg body weight.

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

The most important symptoms are described in sections 2 and 11.

Irritation effects: This product contains substances, which may cause irritation upon exposure to skin, eyes or lungs. Exposure may result in an increased absorption potential of other hazardous substances at the area of exposure.

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

IF exposed or concerned:

Get immediate medical advice/attention.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1 Extinguishing media

Suitable Extinguishing media

Alcohol-resistant foam, carbonic acid, powder, water mist.

Unsuitable extinguishing media

Waterjets should not be used, since they can spread the fire. However they may be used to cool adjacent containers.

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

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Carbon oxides (CO / CO<sub>2</sub>).

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact The National Poisons Information Service (dial 111, 24 h service) in order to obtain further advice.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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

Avoid direct contact with spilled substances.

Avoid inhalation of vapours from spilled material.

Prevent unnecessary personnel entering area of spillage. When cleaning up large spills appropriate protective clothing should be worn -see section 8.

### 6.2 Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of leakage to the surroundings, contact local environmental authorities.

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

Limit spillage and collect using granular absorbent or similar materials, and dispose of it in accordance with the regulations on dangerous waste.



## Brake Fluid DOT 4

Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations. Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

### 6.4 Reference to other sections

See Also Section 8, 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid any method of handling that generates mists or aerosols.  
Do not eat, drink or smoke when handling this product.  
See section on 'Exposure controls/personal protection' for information on personal protection.

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

Always store in containers of the same material as the original container.  
Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Storage temperature

Room temperature 15 to 30°C

Storage life

Stable under normal conditions.

Incompatible materials

None known.

### 7.3 Specific end use(s)

This product should only be used for applications quoted in section 1.2

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### 8.1.1 Occupational Exposure Limits

—

2,2' -oxybisethanol;

Long term exposure limit (8 hours): 23 ppm

Long term exposure limit (8 hours): 101 mg/m<sup>3</sup>

—

2-(2-butoxyethoxy)ethanol;

Long term exposure limit (8 hours): 10 ppm

Long term exposure limit (8 hours): 67,5 mg/m<sup>3</sup>

Short term exposure limit (15 minutes): 15 ppm

Short term exposure limit (15 minutes): 101,2 mg/m<sup>3</sup>

—

2-(2-methoxyethoxy)ethanol;

Long term exposure limit (8 hours): 10 ppm

Long term exposure limit (8 hours): 50,1 mg/m<sup>3</sup>

Annotations:

Sk = Can be absorbed through the skin and lead to systemic toxicity.

**Brake Fluid DOT 4**

The Control of Substances Hazardous to Health Regulations 2002. SI 2002/2677  
The Stationery Office 2002.  
EH40/2005 Workplace exposure limits (Fourth Edition 2020)

## DNEL

Product/Ingredient name	DNEL	Route of exposure	Duration
Butyl Triglycol	50mg/kgBW/day	Dermal	Long term – Systemic effects - Workers
Butyl Triglycol	195mg/m <sup>3</sup>	Inhalation	Long term – Systemic effects - Workers
2,2' -oxybisethanol;	106 mg/kgBW / Day	Dermal	Long term – Systemic
2,2' -oxybisethanol;	60mg/m <sup>3</sup>	Inhalation	Long term – Systemic effects - Workers
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	8.3 mg/kgBW/day	Dermal	Long term – Systemic effects - Workers
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	29.1 mg/m <sup>3</sup>	Inhalation	Long term – Systemic effects - Workers
2-(2-butoxyethoxy)ethanol;	20mg/kgBW/day	Dermal	Long term – Systemic effects - Workers
2-(2-butoxyethoxy)ethanol;	67mg/m <sup>3</sup>	Inhalation	Long term – Systemic effects - Workers
2-(2-butoxyethoxy)ethanol;	0.53mg/kg BW/day	Dermal	Long term – Systemic effects - Workers
2-(2-butoxyethoxy)ethanol;	50.1mg/m <sup>3</sup>	Inhalation	Long term – Systemic effects - Workers

## PNEC

Product/Ingredient name	PNEC	Route of exposure	Duration
Butyl Triglycol	5mg/L	Water	Single



## Brake Fluid DOT 4

Butyl Triglycol	200mg/L	Sewage Treatment Plant	Continuous
2,2' -oxybisethanol;	10mg/L	Water	Single
2,2' -oxybisethanol;	199.5mg/L	Sewage Treatment Plant	Continuous
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	2.112 mg/l	Water	Single
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	100 mg/l	Sewage Treatment Plant	Continuous
2-(2-butoxyethoxy)ethanol;	3.9mg/L	Water	Single
2-(2-butoxyethoxy)ethanol;	200mg/L	Sewage Treatment Plant	Continuous
2-(2-butoxyethoxy)ethanol;	12mg/L	Water	Single
2-(2-butoxyethoxy)ethanol;	10000mg/L	Sewage Treatment Plant	Continuous

## 8.2 Exposure controls

### 8.2.1. Appropriate engineering controls [Exposure controls](#)

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

#### [General recommendations](#)

Do not eat, drink or smoke in the workplace

#### [Exposure limits](#)

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

#### [Appropriate technical measures](#)

Airborne vapour and mist concentrations must be kept at a minimum and below current limit values (see above).

Installation of a Local exhaust system if normal air flow in the work room is not sufficient is recommended.

Ensure emergency eyewash and -showers are clearly marked.

#### [Hygiene measures](#)

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Always wash hands, forearms and face.

### 8.2.2. Personal protection equipment



Eye Protection

Wear eye protection with side protection (EN166).

**Brake Fluid DOT 4**

Skin protection

Wear Impervious Gloves (EN374-2, EN374-3, EN388)



Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.



Thermal hazards

None known.

8.2.3. Environmental Exposure Controls Do not release large quantities into the surface water or into drains.  
Keep spill absorbent materials available in the workplace. If possible, clean up any spills immediately.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

Physical state	Liquid.
Colour	Amber
Odour	Characteristic odour
Melting point/freezing point	< -50
Boiling point or initial boiling point and boiling range	>210 °C
Flammability	Not known.
Lower and upper explosion limit	Not known.
Flash Point	>100 °C
Auto-ignition temperature	>280 °C
Decomposition Temperature	300
pH	7-10.5
Kinematic Viscosity	5-10 centistokes (20.00 °C)
Solubility	Solubility (Water) : Soluble Solubility (Other) : Not known.
Partition coefficient n-octanol/water (log value)	1.50
Vapour pressure	1.00 millibar
Density and/or relative density	Density (g/ml) : 1.01-1.06 g/cm <sup>3</sup> - Relative density : 15 °C
Relative vapour density	Not known.
Particle characteristics	Not known.

**9.2 Other information****SECTION 10: STABILITY AND REACTIVITY****10.1 Reactivity**

None anticipated.

**Brake Fluid DOT 4****10.2 Chemical Stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

No hazardous reactions known if used for its intended purpose.

**10.4 Conditions to avoid**

None anticipated.

**10.5 Incompatible materials**

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

**10.6 Hazardous decomposition products**

No hazardous decomposition products known.

**SECTION 11: TOXICOLOGICAL INFORMATION****11.1 Information on Toxicological Effects**

Acute toxicity - Ingestion Based on read across data toxicity is low (LD 50 Rat >5000 mg/kg). Sparse experience indicates toxicity in man could be greater.

Acute toxicity - Skin Contact Based on read across data toxicity is low (LD 50 Rabbit >3000 mg/kg).

Acute toxicity - Inhalation Not applicable due to low vapour pressure of product.

Acute toxicity -General Although acute toxicity of this product is low, if significant amounts are absorbed there is a risk of renal damage which could lead to kidney failure or even death. Other symptoms of overexposure include Central Nervous System effects, abdominal discomfort, metabolic acidosis and headache or nausea.

Skin corrosion/irritation Based on available data, the classification criteria are not met. However, repeated contact may de-fat the skin and cause dermatitis.

Serious eye damage/irritation Causes serious eye irritation.

Skin sensitization data Not classified.

Respiratory sensitization data Not classified.

Germ cell mutagenicity Not classified.

Carcinogenicity Not classified.

Reproductive toxicity Suspected of damaging the unborn child.

Lactation Not classified.

STOT - single exposure Not classified.

STOT - repeated exposure Not classified.

Aspiration hazard Not classified.

**11.2 Information on other hazards****Long term effects**

Reproductive toxicity: This product contains teratogenic substances, which may produce anomalies and/or developmental defects to the human offspring. Adverse effects include: death, growth retardation, congenital disorders, delayed mental development, and functional disorders.

**Brake Fluid DOT 4**

Irritation effects: This product contains substances, which may cause irritation upon exposure to skin, eyes or lungs. Exposure may result in an increased absorption potential of other hazardous substances at the area of exposure.

**SECTION 12: ECOLOGICAL INFORMATION****12.1 Toxicity**

Product is of low ecotoxicity  
Fish 96h LC50 >100mg/l (Oncorhynchus Mykiss)  
Daphnia 48h EC50 Not determined but expected to be virtually non-toxic  
Algae 72h EC50 Not determined but expected to be virtually non-toxic

**12.2 Persistence and degradability**

Product is inherently biodegradable and is expected to be readily biodegradable based on ingredients (OECD 302B).  
If admitted into adapted biological water treatment plants no adverse effects of the degrading action of the live sludge are expected

**12.3 Bioaccumulative potential**

Not expected to Bio-accumulate. Log POW for all main ingredients <2.0

**12.4 Mobility in soil**

Product is soluble in water and will be mobile in soil until degraded. Volatilisation from water to air not expected.

**12.5 Results of PBT and vPvB assessment**

This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB.

**12.6 Endocrine disrupting properties**

None known.

**12.7 Other adverse effects**

Not known.

**SECTION 13: DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods**

Product is covered by the regulations on hazardous waste.  
Dispose of in accord with local and national regulations. Recycling or controlled incineration with energy recovery are recommended.

**13.2 Additional Information**

No special precautions are required for this product.

**SECTION 14: TRANSPORT INFORMATION**

Not classified as hazardous for transport.

**14.1 UN number or ID number**

Not dangerous goods according to ADR, IATA and IMDG.

**Brake Fluid DOT 4**

<b>14.2 UN proper shipping name</b>	Not dangerous goods according to ADR, IATA and IMDG.
<b>14.3 Transport hazard class(es)</b>	Not dangerous goods according to ADR, IATA and IMDG.
<b>14.4 Packing group</b>	Not dangerous goods according to ADR, IATA and IMDG.
<b>14.5 Environmental hazards</b>	Not applicable.
<b>14.6 Special precautions for user</b>	Not applicable
<b>14.7 Maritime transport in bulk according to IMO instruments</b>	No data available

**SECTION 15: REGULATORY INFORMATION****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

European Regulations - Authorisations and/or Restrictions On Use

Candidate List of Substances of Very High Concern for Authorisation	Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.
---	--

REACH: ANNEX XIV list of substances subject to authorisation Not listed

REACH: Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles 2-(2-butoxyethoxy)ethanol (DEGBE) (112-34-5), 2-(2-methoxyethoxy)ethanol (DEGME) (111-77-3), 2-[2-(2-butoxyethoxy)ethoxy]ethanol TEGBE triethylene glycol monobutyl ether butoxytriethylene glycol (143-22-6), 2,2'-oxybisethanol diethylene glycol (111-46-6), ?, Polyethylene glycol butyl ether (9004-77-7)

Community Rolling Action Plan (CoRAP) 2,2'-oxydiethanol (111-46-6)

Regulation (EC) N° 850/2004 of the European Parliament and of the Council on persistent organic pollutants Not listed

Regulation (EC) N° 1005/2009 on substances that deplete the ozone layer Not listed

Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals Not listed

Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals Not listed

Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals Not listed

**National regulations**

Other Not known.

**15.2 Chemical Safety Assessment**

A REACH chemical safety assessment has not been carried out.

**SECTION 16: OTHER INFORMATION**

**Brake Fluid DOT 4**

The following sections contain revisions or new statements:

**LEGEND**

Hazard Pictogram(s)



GHS08



GHS07

Hazard classification

Acute Tox. 4 : Acute toxicity, Category 4  
Eye Dam. 1 : Serious eye damage/irritation, Category 1  
Eye Irrit. 2 : Serious eye damage/irritation, Category 2  
Repr. 2 : Reproductive toxicity, Category 2

Hazard Statement(s)

H318, Causes serious eye damage.  
H302, Harmful if swallowed.  
H361d, Suspected of damaging the unborn child.  
H319, Causes serious eye irritation.

Precautionary Statement(s)

P101, If medical advice is needed, have product container or label at hand.  
P102, Keep out of reach of children  
P264, Wash hands/exposed areas thoroughly after handling.  
P301+P310, IF SWALLOWED: Immediately call a POISON CENTER/doctor.  
P337+P313, If eye irritation persists: Get medical advice/attention.  
P305+P351+P338, IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
P501, Dispose of contents/container to an approved waste disposal plant.

Acronyms

ATE : Acute Toxicity Estimate  
CAS : Chemical Abstracts Service  
CLP : Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures  
DNEL : Derived No Effect Level  
EC : European Community  
EINECS : European Inventory of Existing Commercial Chemical Substances  
LTEL : Long term exposure limit  
PBT : Persistent, Bioaccumulative and Toxic  
PNEC : Predicted No Effect Concentration  
REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals  
STEL : Short term exposure limit



## Brake Fluid DOT 4

STOT : Specific Target Organ Toxicity

vPvB : very Persistent and very Bioaccumulative

Key literature references and sources for Regulation (EC) No. 1272/2008 (CLP)  
data used to compile the SDS

### Disclaimers

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Granville Oil & Chemicals Ltd gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Granville Oil & Chemicals Ltd accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.