



**DPSS – Delphi Diesel Systems Ltd**  
**SAFETY DATA SHEET**  
**PRODUCT**

This Safety Data Sheet conforms to EC Directive 91/155/EEC or as subsequently amended.

Delphi Diesel Systems Limited urges the recipient of this Safety Data Sheet to study it carefully, to become aware of the hazards, if any, of the products involved. In the interest of safety you should:-

- (1) Notify your employees, agents and contractors of the information on this sheet.
- (2) Furnish a copy to each of your customers for the product.
- (3) Request your customers to inform their employees and customers as well.

**REFERENCE:** DOT 3  
**ISSUE DATE:** 08/06/2015

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**1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION  
AND OF THE COMPANY / UNDERTAKING**

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**IDENTIFICATION OF THE SUBSTANCE OR PREPARATION**

**PRODUCT NAME** Delphi DOT 3

**APPLICATION** Brake & Clutch Fluid

**FEATURES**

**COMPANY IDENTIFICATION**

Delphi Diesel Systems Limited  
P.O. Box 1743  
Spartan Close  
Warwick  
Warwickshire  
CV34 6AG

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**EMERGENCY TELEPHONE NUMBER**

Telephone Number: +44 0203 8161 400

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**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



*Skin Irrit. 2 H315 Causes skin irritation.*  
*Eye Irrit. 2 H319 Causes serious eye irritation.*

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- **2.2 Label elements**
  - **Labelling according to Regulation (EC) No 1272/2008**  
*The product is classified and labelled according to the CLP regulation.*
  - **Hazard pictograms**



GHS07

- **Signal word** *Warning*
- **Hazard statements**  
*H315 Causes skin irritation.*  
*H319 Causes serious eye irritation.*
- **Precautionary statements**  
*P102 Keep out of reach of children.*  
*P301+P310 IF SWALLOWED: Immediately call a doctor.*  
*P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*  
*P302+P352 IF ON SKIN: Wash with plenty of water.*  
*P501 Dispose of contents/container to an authorized waste collection point.*
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*



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## SAFETY DATA SHEET PRODUCT

### SECTION 3: Composition/information on ingredients

#### 3.2 Chemical characterisation: Mixtures

Description: Mixture based on: polyglycols, glycol ether, inhibitors, tri methylene glycol borate

#### Dangerous components:

CAS: 161907-77-3 EC number: 310-287-7	ethanol, 2-butoxy-, manufacture of, by-products from ☞ Eye Dam. 1, H318	0-<30%
CAS: 143-22-6 EINECS: 205-592-6	2-[2-(2-butoxyethoxy)ethoxy]ethanol ☞ Eye Dam. 1, H318	0-<30%
CAS: 112-25-4 EINECS: 203-951-1	2-hexyloxyethanol ☞ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312	0-<17%
CAS: 9004-77-7 NLP: 500-012-0	Poly(oxy-1,2-ethanediyl), $\alpha$ -butyl- $\omega$ -hydroxy- ☞ Eye Dam. 1, H318	0-<30%
CAS: 111-46-6 EINECS: 203-872-2	2,2'-oxybisethanol ☠ STOT RE 2, H373; ⚠ Acute Tox. 4, H302	0-<5%
CAS: 112-34-5 EINECS: 203-961-6	2-(2-butoxyethoxy)ethanol ⚠ Eye Irrit. 2, H319	0-<5%

CAS: 111-77-3 EINECS: 203-906-6	2-(2-methoxyethoxy)ethanol ☠ Repr. 2, H361d	0-<3%
CAS: 112-59-4 EINECS: 203-988-3	2-(2-hexyloxyethoxy)ethanol ☞ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H312	0-<2%

Additional information: For the wording of the listed risk phrases refer to section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

##### General information:

Keep quiet and cover.

Seek medical treatment.

Personal protection for the First Aider:

Take affected persons out into the fresh air.

After inhalation: In case of unconsciousness place patient stably in side position for transportation.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

A person vomiting while laying on their back should be turned onto their side.

Induce vomiting, if person is conscious. Seek medical help.

4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.



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**SECTION 5: Firefighting measures**

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
*CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*
- **5.2 Special hazards arising from the substance or mixture** *No further relevant information available.*
- **5.3 Advice for firefighters**
- **Protective equipment:** *Wear fully protective suit.*
- **Additional information** *Cool endangered receptacles with water spray.*

**SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures** *Not required.*
- **6.2 Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.*
- **6.3 Methods and material for containment and cleaning up:**  
*Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.*
- **6.4 Reference to other sections**  
*See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.*

**SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling**  
*Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.*
- **Information about fire - and explosion protection:** *No special measures required.*
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** *No special requirements.*
- **Information about storage in one common storage facility:** *Not required.*
- **Further information about storage conditions:** *Keep container tightly sealed.*
- **7.3 Specific end use(s)** *No further relevant information available.*

**SECTION 8: Exposure controls/personal protection**

- **Additional information about design of technical facilities:** *No further data; see item 7.*
- **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

<b>111-46-6 2,2'-oxybisethanol</b>	
WEL	Long-term value: 101 mg/m <sup>3</sup> , 23 ppm
<b>112-34-5 2-(2-butoxyethoxy)ethanol</b>	
WEL	Short-term value: 101.2 mg/m <sup>3</sup> , 15 ppm Long-term value: 67.5 mg/m <sup>3</sup> , 10 ppm



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111-77-3 2-(2-methoxyethoxy)ethanol

WEL Long-term value: 50.1 mg/m<sup>3</sup>, 10 ppm  
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· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product 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.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid

Colour: Colourless to amber

· **Odour:** Characteristic

· **Odour threshold:** N/A-very low odor



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· <i>pH-value at 20 °C:</i>	7-10 (SAE J 1703)
· <i>Change in condition</i> <i>Melting point/Melting range:</i>	<-50 °C (SAE J 1703)
<i>Boiling point/Boiling range:</i>	205 °C (SAE J 1703)
· <i>Flash point:</i>	93 °C (IP 35)
· <i>Flammability (solid, gaseous):</i>	Not applicable.
· <i>Ignition temperature:</i>	>300 °C (ASTM D 286)
· <i>Decomposition temperature:</i>	>300 °C
· <i>Self-igniting:</i>	Product is not selfigniting.
· <i>Danger of explosion:</i>	Product does not present an explosion hazard.
· <i>Explosion limits:</i> <i>Lower:</i>	Not determined.
<i>Upper:</i>	Not determined.
· <i>Vapour pressure:</i>	Not determined.
· <i>Density:</i>	Not determined.
· <i>Relative density</i>	Not determined.
· <i>Vapour density</i>	Not determined.
· <i>Evaporation rate</i>	Not determined.
· <i>Solubility in / Miscibility with water:</i>	Soluble.
· <i>Partition coefficient (n-octanol/water):</i>	Not determined.
· <i>Viscosity:</i> <i>Dynamic:</i>	Not determined.
<i>Kinematic:</i>	Not determined.
· <i>9.2 Other information</i>	No further relevant information available.

#### **SECTION 10: Stability and reactivity**

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with acids, alkalis and oxidising agents.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.



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### SECTION 11: Toxicological information

#### · 11.1 Information on toxicological effects

##### · Acute toxicity

##### · LD/LC50 values relevant for classification:

ATE (Acute Toxicity Estimates)		
Oral	LD50	2959 mg/kg
Dermal	LD50	6013 mg/kg
161907-77-3 ethanol, 2-butoxy-, manufacture of, by-products from		
Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)
143-22-6 2-[2-(2-butoxyethoxy)ethoxy]ethanol		
Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)
112-25-4 2-hexyloxyethanol		
Oral	LD50	1484 mg/kg (rat)
Dermal	LD50	757 mg/kg (rabbit)
111-46-6 2,2'-oxybisethanol		
Oral	LD50	12565 mg/kg (rat)
Dermal	LD50	11890 mg/kg (rabbit)
112-34-5 2-(2-butoxyethoxy)ethanol		
Oral	LD50	5660 mg/kg (rat)
Dermal	LD50	4000 mg/kg (rabbit)
111-77-3 2-(2-methoxyethoxy)ethanol		
Oral	LD50	5500 mg/kg (rat)
Dermal	LD50	6540 mg/kg (rabbit)
112-59-4 2-(2-hexyloxyethoxy)ethanol		
Oral	LD50	4920 mg/kg (rat)
Dermal	LD50	1500 mg/kg (rabbit)

##### · Primary irritant effect:

· **Skin corrosion/irritation** Irritant to skin and mucous membranes.

· **Serious eye damage/irritation** Irritating effect.

· **Respiratory or skin sensitisation** No sensitising effects known.

##### · Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Irritant

Classification was made by OECD tests, conventional (calculation) method of the CLP directive (1272/2008), the present state of knowledge, analogy with a product of similar composition.

### SECTION 12: Ecological information

#### · 12.1 Toxicity

· **Aquatic toxicity:** No further relevant information available.

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential** No further relevant information available.

· **12.4 Mobility in soil** No further relevant information available.

##### · Additional ecological information:



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· **General notes:**

*Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*

· **12.5 Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**

· **13.1 Waste treatment methods**

· **Recommendation**

*Must not be disposed together with household garbage. Do not allow product to reach sewage system.*

· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

**SECTION 14: Transport information**

· <b>14.1 UN-Number</b> · <b>ADR, ADN, IMDG, IATA</b>	Void
· <b>14.2 UN proper shipping name</b> · <b>ADR, ADN, IMDG, IATA</b>	Void
· <b>14.3 Transport hazard class(es)</b> · <b>ADR, IMDG, IATA</b> · <b>Class</b> · <b>Label</b> · <b>ADN/R Class:</b>	Void - Void
· <b>14.4 Packing group</b> · <b>ADR, IMDG, IATA</b>	Void
· <b>14.5 Environmental hazards:</b> · <b>Marine pollutant:</b>	No
· <b>14.6 Special precautions for user</b> · <b>Danger code (Kemler):</b> · <b>EMS Number:</b>	Not applicable. - -
· <b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b> ----- · <b>IMDG</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	- Code: -
· <b>UN "Model Regulation":</b>	UN-, -





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### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **National regulations:**
  1. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC
  2. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006Local regulations.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
  - H302 Harmful if swallowed.
  - H312 Harmful in contact with skin.
  - H314 Causes severe skin burns and eye damage.
  - 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.
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - Acute Tox. 4: Acute toxicity, Hazard Category 4
  - Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
  - Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
  - Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  - Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
  - Repr. 2: Reproductive toxicity, Hazard Category 2
  - STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2



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- (1) Notify your employees, agents and contractors of the information on this sheet.
- (2) Furnish a copy to each of your customers for the product.
- (3) Request your customers to inform their employees and customers as well.

**REFERENCE:** DOT 4 LV (ESP)

**ISSUE DATE:** 08/06/2015

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#### 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

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##### IDENTIFICATION OF THE SUBSTANCE OR PREPARATION

**PRODUCT NAME** Delphi DOT 4 LV (ESP)

**APPLICATION** Brake & Clutch Fluid

##### FEATURES

##### COMPANY IDENTIFICATION

Delphi Diesel Systems Limited  
P.O. Box 1743  
Spartan Close  
Warwick  
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##### EMERGENCY TELEPHONE NUMBER

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**SAFETY DATA SHEET  
PRODUCT****SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



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*Skin Irrit. 2 H315 Causes skin irritation.*  
*Eye Irrit. 2 H319 Causes serious eye irritation.*

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
*The product is classified and labelled according to the CLP regulation.*
- **Hazard pictograms**



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- **Signal word** *Warning*
- **Hazard statements**  
*H315 Causes skin irritation.*  
*H319 Causes serious eye irritation.*
- **Precautionary statements**  
*P102 Keep out of reach of children.*  
*P301+P310 IF SWALLOWED: Immediately call a doctor.*  
*P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*  
*P302+P352 IF ON SKIN: Wash with plenty of water.*  
*P501 Dispose of contents/container to an authorized waste collection point.*
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*

**SECTION 3: Composition/information on ingredients**

- **3.2 Chemical characterisation: Mixtures**
- **Description:** *Mixture: consisting of the following components.*

· <b>Dangerous components:</b>		
CAS: 143-22-6 EINECS: 205-592-6	2-[2-(2-butoxyethoxy)ethoxy]ethanol ⚠ Eye Dam. 1, H318	<4%
CAS: 112-25-4 EINECS: 203-951-1	2-hexyloxyethanol ⚠ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312	<3%
CAS: 111-77-3 EINECS: 203-906-6	2-(2-methoxyethoxy)ethanol ⚠ Repr. 2, H361d	<2%
CAS: 110-97-4 EINECS: 203-820-9	1,1'-iminodipropan-2-ol ⚠ Eye Irrit. 2, H319	<2%

- **Additional information:** *For the wording of the listed risk phrases refer to section 16.*



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## SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** Take affected persons out into the fresh air.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.
- **Additional information** Cool endangered receptacles with water spray.

## SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

### 8.1 Control parameters

- **Ingredients with limit values that require monitoring at the workplace:**

111-77-3 2-(2-methoxyethoxy)ethanol

WEL	Long-term value: 50.1 mg/m <sup>3</sup> , 10 ppm
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- **Additional information:** The lists valid during the making were used as basis.



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- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
 Keep away from foodstuffs, beverages and feed.  
 Immediately remove all soiled and contaminated clothing  
 Wash hands before breaks and at the end of work.  
 Avoid contact with the eyes and skin.
- **Respiratory protection:** Not required.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
 Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
 Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**  
 The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product 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.
- **Penetration time of glove material**  
 The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

**SECTION 9: Physical and chemical properties**

· <b>9.1 Information on basic physical and chemical properties</b>	
· <b>General Information</b>	
· <b>Appearance:</b>	
Form:	Liquid
Colour:	Yellow
· Odour:	Characteristic
· Odour threshold:	Not determined.
· pH-value at 20 °C:	8.5
· <b>Change in condition</b>	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	265 °C
· Flash point:	135 °C
· Flammability (solid, gaseous):	Not applicable.
· <b>Ignition temperature:</b>	
Decomposition temperature:	Not determined.
· Self-igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.



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· <i>Explosion limits:</i>	
<i>Lower:</i>	<i>Not determined.</i>
<i>Upper:</i>	<i>Not determined.</i>
· <i>Vapour pressure:</i>	<i>Not determined.</i>
· <i>Density at 20 °C:</i>	<i>1.06 g/cm<sup>3</sup></i>
· <i>Relative density</i>	<i>Not determined.</i>
· <i>Vapour density</i>	<i>Not determined.</i>
· <i>Evaporation rate</i>	<i>Not determined.</i>
· <i>Solubility in / Miscibility with water:</i>	<i>Soluble.</i>
· <i>Partition coefficient (n-octanol/water):</i>	<i>Not determined.</i>
· <i>Viscosity:</i>	
<i>Dynamic:</i>	<i>Not determined.</i>
<i>Kinematic:</i>	<i>Not determined.</i>
· <i>Solvent content:</i>	
<i>VOC (EC)</i>	<i>1.50 %</i>
· <i>9.2 Other information</i>	<i>No further relevant information available.</i>

**SECTION 10: Stability and reactivity**

- *10.1 Reactivity*
- *10.2 Chemical stability*
- *Thermal decomposition / conditions to be avoided:* *No decomposition if used according to specifications.*
- *10.3 Possibility of hazardous reactions* *No dangerous reactions known.*
- *10.4 Conditions to avoid* *No further relevant information available.*
- *10.5 Incompatible materials:* *No further relevant information available.*
- *10.6 Hazardous decomposition products:* *No dangerous decomposition products known.*

**SECTION 11: Toxicological information**

- *11.1 Information on toxicological effects*
- *Acute toxicity*

· <i>LD/LC50 values relevant for classification:</i>		
<i>ATE (Acute Toxicity Estimates)</i>		
<i>Oral</i>	<i>LD50</i>	<i>15385 mg/kg</i>
<i>Dermal</i>	<i>LD50</i>	<i>26506 mg/kg</i>
<i>143-22-6 2-[2-(2-butoxyethoxy)ethoxy]ethanol</i>		
<i>Oral</i>	<i>LD50</i>	<i>&gt;2000 mg/kg (rat)</i>
<i>Dermal</i>	<i>LD50</i>	<i>&gt;2000 mg/kg (rabbit)</i>
<i>112-25-4 2-hexyloxyethanol</i>		
<i>Oral</i>	<i>LD50</i>	<i>1484 mg/kg (rat)</i>
<i>Dermal</i>	<i>LD50</i>	<i>757 mg/kg (rabbit)</i>
<i>111-77-3 2-(2-methoxyethoxy)ethanol</i>		
<i>Oral</i>	<i>LD50</i>	<i>5500 mg/kg (rat)</i>
<i>Dermal</i>	<i>LD50</i>	<i>6540 mg/kg (rabbit)</i>



**SAFETY DATA SHEET**

**PRODUCT**

- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
Irritant

**SECTION 12: Ecological information**

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

**SECTION 14: Transport information**

· <b>14.1 UN-Number</b> · <b>ADR, ADN, IMDG, IATA</b>	Void
· <b>14.2 UN proper shipping name</b> · <b>ADR, ADN, IMDG, IATA</b>	Void
· <b>14.3 Transport hazard class(es)</b> · <b>ADR, ADN, IMDG, IATA</b> · <b>Class</b>	Void
· <b>14.4 Packing group</b> · <b>ADR, IMDG, IATA</b>	Void
· <b>14.5 Environmental hazards:</b> · <b>Marine pollutant:</b>	No
· <b>14.6 Special precautions for user</b>	Not applicable.
· <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>UN "Model Regulation":</b>	-



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## SAFETY DATA SHEET PRODUCT

### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **National regulations:**
  1. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC
  2. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006  
Local regulations.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

#### · **Relevant phrases**

- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H361d Suspected of damaging the unborn child.

#### · **Abbreviations and acronyms:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- Acute Tox. 4: Acute toxicity, Hazard Category 4
- Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
- Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
- Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
- Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
- Repr. 2: Reproductive toxicity, Hazard Category 2





DPSS – Delphi Diesel Systems Ltd

## SAFETY DATA SHEET

### PRODUCT

This Safety Data Sheet conforms to EC Directive 91/155/EEC or as subsequently amended.

Delphi Diesel Systems Limited urges the recipient of this Safety Data Sheet to study it carefully, to become aware of the hazards, if any, of the products involved. In the interest of safety you should:-

- (1) Notify your employees, agents and contractors of the information on this sheet.
- (2) Furnish a copy to each of your customers for the product.
- (3) Request your customers to inform their employees and customers as well.

**REFERENCE:** DOT 4  
**ISSUE DATE:** 08/06/2015

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#### 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

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##### IDENTIFICATION OF THE SUBSTANCE OR PREPARATION

**PRODUCT NAME** Delphi DOT 4

**APPLICATION** Brake & Clutch Fluid

##### FEATURES

##### COMPANY IDENTIFICATION

Delphi Diesel Systems Limited  
P.O. Box 1743  
Spartan Close  
Warwick  
Warwickshire  
CV34 6AG

Telephone Number: +44 1926 47 0000  
Facsimile Number: +44 1926 47 2000  
E-mail Address: [support.uk@delphi.com](mailto:support.uk@delphi.com)  
Web Site: [www.delphi.com](http://www.delphi.com)

##### EMERGENCY TELEPHONE NUMBER

Telephone Number: +44 0203 8161 400

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**SAFETY DATA SHEET**

**PRODUCT**

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS07

*Skin Irrit. 2 H315 Causes skin irritation.*  
*Eye Irrit. 2 H319 Causes serious eye irritation.*

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
*The product is classified and labelled according to the CLP regulation.*
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard statements**  
*H315 Causes skin irritation.*  
*H319 Causes serious eye irritation.*
- **Precautionary statements**  
*P102 Keep out of reach of children.*  
*P301+P310 IF SWALLOWED: Immediately call a doctor.*  
*P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*  
*P302+P352 IF ON SKIN: Wash with plenty of water.*  
*P501 Dispose of contents/container to an authorized waste collection point.*
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

**SECTION 3: Composition/information on ingredients**

- **3.2 Chemical characterisation: Mixtures**
- **Description:** Mixture based on: polyglycols, glycol ether, inhibitors, tri methylene glycol borate

· <b>Dangerous components:</b>		
CAS: 161907-77-3 EC number: 310-287-7	ethanol, 2-butoxy-, manufacture of, by-products from ⚠ Eye Dam. 1, H318	0-<30%
CAS: 9004-77-7 NLP: 500-012-0	Poly(oxy-1,2-ethanediyl), α-butyl-ω-hydroxy- ⚠ Eye Dam. 1, H318	0-<30%
CAS: 143-22-6 EINECS: 205-592-6	2-[2-(2-butoxyethoxy)ethoxy]ethanol ⚠ Eye Dam. 1, H318	0-<30%
CAS: 112-25-4 EINECS: 203-951-1	2-hexyloxyethanol ⚠ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; ⚠ Acute Tox. 4, H312	0-<17%
CAS: 111-46-6 EINECS: 203-872-2	2,2'-oxybisethanol ⚠ STOT RE 2, H373; ⚠ Acute Tox. 4, H302	0-<5%



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## SAFETY DATA SHEET

### PRODUCT

CAS: 112-34-5 EINECS: 203-961-6	2-(2-butoxyethoxy)ethanol ⚠ Eye Irrit. 2, H319	0-<5%
CAS: 111-77-3 EINECS: 203-906-6	2-(2-methoxyethoxy)ethanol ⚠ Repr. 2, H361d	0-<3%
CAS: 112-59-4 EINECS: 203-988-3	2-(2-hexyloxyethoxy)ethanol ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H312	0-<2%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

#### SECTION 4: First aid measures

##### · 4.1 Description of first aid measures

###### · **General information:**

Keep quiet and cover.

Seek medical treatment.

Personal protection for the First Aider.

Take affected persons out into the fresh air.

· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

###### · **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

###### · **After swallowing:**

A person vomiting while laying on their back should be turned onto their side.

Induce vomiting, if person is conscious. Seek medical help.

· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

#### SECTION 5: Firefighting measures

##### · 5.1 Extinguishing media

###### · **Suitable extinguishing agents:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **5.2 Special hazards arising from the substance or mixture** No further relevant information available.

###### · 5.3 Advice for firefighters

· **Protective equipment:** Wear fully protective suit.

· **Additional information** Cool endangered receptacles with water spray.

#### SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures** Not required.

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

###### · **6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

###### · **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.



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PRODUCT**

**SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

· <b>Ingredients with limit values that require monitoring at the workplace:</b>	
<b>111-46-6 2,2'-oxybisethanol</b>	
WEL	Long-term value: 101 mg/m <sup>3</sup> , 23 ppm
<b>112-34-5 2-(2-butoxyethoxy)ethanol</b>	
WEL	Short-term value: 101.2 mg/m <sup>3</sup> , 15 ppm
	Long-term value: 67.5 mg/m <sup>3</sup> , 10 ppm
(Contd. of page 5)	
<b>111-77-3 2-(2-methoxyethoxy)ethanol</b>	
WEL	Long-term value: 50.1 mg/m <sup>3</sup> , 10 ppm
	Sk

- **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.

· **Respiratory protection:**

- In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation



## SAFETY DATA SHEET

## PRODUCT

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product 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.

**Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:**

Tightly sealed goggles

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:**

<b>Form:</b>	Liquid
<b>Colour:</b>	Colourless to amber
<b>Odour:</b>	Characteristic
<b>Odour threshold:</b>	N/A-very low odor

**pH-value at 20 °C:** 7-10 (SAE J 1703)

**Change in condition**

<b>Melting point/Melting range:</b>	<-50 °C (SAE J 1703)
<b>Boiling point/Boiling range:</b>	>230 °C (SAE J 1703)

**Flash point:** >100 °C (IP 35)

**Flammability (solid, gaseous):** Not applicable.

**Ignition temperature:** >300 °C (ASTM D 286)

**Decomposition temperature:** >300 °C

**Self-igniting:** Product is not selfigniting.

**Danger of explosion:** Product does not present an explosion hazard.

**Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

**Vapour pressure:** Not determined.

**Density at 20 °C:** 1.05-1.09 g/cm<sup>3</sup> (51757)

**Relative density:** Not determined.

**Vapour density:** Not determined.

**Evaporation rate:** Not determined.

**Solubility in / Miscibility with water:**

Soluble.

**Partition coefficient (n-octanol/water):** Not determined.

**Viscosity:**

<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.

**9.2 Other information** No further relevant information available.



## SAFETY DATA SHEET

### PRODUCT

#### SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with acids, alkalis and oxidising agents.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

#### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**

· **LD/LC50 values relevant for classification:**

**ATE (Acute Toxicity Estimates)**

Oral	LD50	2959 mg/kg
Dermal	LD50	6013 mg/kg

**161907-77-3 ethanol, 2-butoxy-, manufacture of, by-products from**

Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)

**143-22-6 2-[2-(2-butoxyethoxy)ethoxy]ethanol**

Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)

**112-25-4 2-hexyloxyethanol**

Oral	LD50	1484 mg/kg (rat)
Dermal	LD50	757 mg/kg (rabbit)

**111-46-6 2,2'-oxybisethanol**

Oral	LD50	12565 mg/kg (rat)
Dermal	LD50	11890 mg/kg (rabbit)

**112-34-5 2-(2-butoxyethoxy)ethanol**

Oral	LD50	5660 mg/kg (rat)
Dermal	LD50	4000 mg/kg (rabbit)

**111-77-3 2-(2-methoxyethoxy)ethanol**

Oral	LD50	5500 mg/kg (rat)
Dermal	LD50	6540 mg/kg (rabbit)

**112-59-4 2-(2-hexyloxyethoxy)ethanol**

Oral	LD50	4920 mg/kg (rat)
Dermal	LD50	1500 mg/kg (rabbit)

· **Primary irritant effect:**

· **Skin corrosion/irritation** Irritant to skin and mucous membranes.

· **Serious eye damage/irritation** Irritating effect.

· **Respiratory or skin sensitisation** No sensitising effects known.

· **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Irritant

Classification was made by OECD tests, conventional (calculation) method of the CLP directive (1272/2008), the present state of knowledge, analogy with a product of similar composition.



**SAFETY DATA SHEET**

**PRODUCT**

**SECTION 12: Ecological information**

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

**SECTION 14: Transport information**

· <b>14.1 UN-Number</b>	
· <b>ADR, ADN, IMDG, IATA</b>	Void
· <b>14.2 UN proper shipping name</b>	
· <b>ADR, ADN, IMDG, IATA</b>	Void
· <b>14.3 Transport hazard class(es)</b>	
· <b>ADR, IMDG, IATA</b>	
· <b>Class</b>	Void
· <b>Label</b>	-
· <b>ADN/R Class:</b>	Void
· <b>14.4 Packing group</b>	
· <b>ADR, IMDG, IATA</b>	Void
· <b>14.5 Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>14.6 Special precautions for user</b>	Not applicable.
· <b>Danger code (Kemler):</b>	-
· <b>EMS Number:</b>	-
· <b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	-
· <b>Excepted quantities (EQ)</b>	Code: -
· <b>UN "Model Regulation":</b>	UN-, -



DPSS – Delphi Diesel Systems Ltd

## SAFETY DATA SHEET PRODUCT

### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **National regulations:**
  1. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC
  2. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006  
Local regulations.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
  - H302 Harmful if swallowed.
  - H312 Harmful in contact with skin.
  - H314 Causes severe skin burns and eye damage.
  - 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.
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - ELINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - Acute Tox. 4: Acute toxicity, Hazard Category 4
  - Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
  - Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
  - Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  - Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
  - Repr. 2: Reproductive toxicity, Hazard Category 2
  - STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2





DPSS – Delphi Diesel Systems Automotive Ltd

## SAFETY DATA SHEET PRODUCT

This Safety Data Sheet conforms to EC Directive 91/155/EEC or as subsequently amended.

Delphi Diesel Systems Limited urges the recipient of this Safety Data Sheet to study it carefully, to become aware of the hazards, if any, of the products involved. In the interest of safety you should:-

- (1) Notify your employees, agents and contractors of the information on this sheet.
- (2) Furnish a copy to each of your customers for the product.
- (3) Request your customers to inform their employees and customers as well.

**REFERENCE:** DOT 5.1  
**ISSUE DATE:** 08/06/2015

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### 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

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#### IDENTIFICATION OF THE SUBSTANCE OR PREPARATION

**PRODUCT NAME** Delphi DOT 5.1

**APPLICATION** Brake & Clutch Fluid

#### FEATURES

#### COMPANY IDENTIFICATION

Delphi Diesel Systems Limited  
P.O. Box 1743  
Spartan Close  
Warwick  
Warwickshire  
CV34 6AG

Telephone Number: +44 1926 47 0000  
Facsimile Number: +44 1926 47 2000  
E-mail Address: support.uk@delphi.com  
Web Site: [www.delphi.com](http://www.delphi.com)

#### EMERGENCY TELEPHONE NUMBER

Telephone Number: +44 0203 8161 400

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# SAFETY DATA SHEET

## PRODUCT

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS07

*Skin Irrit. 2 H315 Causes skin irritation.*

*Eye Irrit. 2 H319 Causes serious eye irritation.*

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
*The product is classified and labelled according to the CLP regulation.*
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard statements**  
*H315 Causes skin irritation.*  
*H319 Causes serious eye irritation.*
- **Precautionary statements**  
*P102 Keep out of reach of children.*  
*P301+P310 IF SWALLOWED: Immediately call a doctor.*  
*P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*  
*P302+P352 IF ON SKIN: Wash with plenty of water.*  
*P501 Dispose of contents/container to an authorized waste collection point.*
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
- **Description:** *A mixture of polyethylene glycol ether, a boric acid ester, additives and stabilisers.*

· **Dangerous components:**

CAS: 111-46-6 EINECS: 203-872-2	2,2'-oxybisethanol ⚠ STOT RE 2, H373; ⚠ Acute Tox. 4, H302	<5%
CAS: 15520-05-5 EINECS: 239-555-0	2,2'-(octylimino)bisethanol ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315	<3%
CAS: 112-25-4 EINECS: 203-951-1	2-hexyloxyethanol ⚠ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312	<2%

- **Additional information:** *For the wording of the listed risk phrases refer to section 16.*



## SAFETY DATA SHEET PRODUCT

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
  - Seek medical treatment.
  - Keep quiet and cover.
  - Personal protection for the First Aider.
  - Take affected persons out into the fresh air.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
  - Call a doctor immediately.
  - Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Induce vomiting and call for medical help.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
  - No further relevant information available.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear fully protective suit.
- **Additional information** Cool endangered receptacles with water spray.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Ensure adequate ventilation.
- **6.4 Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
  - Use only in well ventilated areas.
  - Ensure good ventilation/exhaustion at the workplace.
  - Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
  - **Requirements to be met by storerooms and receptacles:** No special requirements.
  - **Information about storage in one common storage facility:** Not required.
  - **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.



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#### SECTION 8: Exposure controls/personal protection

· *Additional information about design of technical facilities: No further data; see item 7.*

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

**111-46-6 2,2'-oxybisethanol**

WEL Long-term value: 101 mg/m<sup>3</sup>, 23 ppm

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

*Keep away from foodstuffs, beverages and feed.*

*Immediately remove all soiled and contaminated clothing*

*Wash hands before breaks and at the end of work.*

*Avoid contact with the eyes and skin.*

· **Respiratory protection:**

*In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.*

· **Protection of hands:**



*Protective gloves*

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.*

*Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.*

*Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*

· **Material of gloves**

*The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product 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.*

· **Penetration time of glove material**

*The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.*

· **Eye protection:**



*Tightly sealed goggles*

#### SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid

Colour: Yellow

· **Odour:** Characteristic

· **Odour threshold:** Not determined.

· **pH-value at 20 °C:** 7-8 (SAE J 1703, SAE J 1704)



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· <i>Change in condition</i>	
<i>Melting point/Melting range:</i>	<i>Undetermined.</i>
<i>Boiling point/Boiling range:</i>	<i>&gt; 260 °C (SAE J 1703, SAE J 1704)</i>
· <i>Flash point:</i>	<i>&gt; 126 °C (DIN EN 22719/ISO 2719)</i>
· <i>Flammability (solid, gaseous):</i>	<i>Not applicable.</i>
· <i>Ignition temperature:</i>	
<i>Decomposition temperature:</i>	<i>Not determined.</i>
· <i>Self-igniting:</i>	<i>Product is not selfigniting.</i>
· <i>Danger of explosion:</i>	<i>Product does not present an explosion hazard.</i>
· <i>Explosion limits:</i>	
<i>Lower:</i>	<i>Not determined.</i>
<i>Upper:</i>	<i>Not determined.</i>
· <i>Vapour pressure:</i>	<i>Not determined.</i>
· <i>Density at 20 °C:</i>	<i>1.06-1.07 g/cm<sup>3</sup> (DIN 51757)</i>
· <i>Relative density</i>	<i>Not determined.</i>
· <i>Vapour density</i>	<i>Not determined.</i>
· <i>Evaporation rate</i>	<i>Not determined.</i>
· <i>Solubility in / Miscibility with water:</i>	<i>Soluble.</i>
· <i>Partition coefficient (n-octanol/water):</i>	<i>Not determined.</i>
· <i>Viscosity:</i>	
<i>Dynamic:</i>	<i>Not determined.</i>
<i>Kinematic at 40 °C:</i>	<i>11-14 mm<sup>2</sup>/s (DIN 51562)</i>
· <i>9.2 Other information</i>	<i>No further relevant information available.</i>

**SECTION 10: Stability and reactivity**

- *10.1 Reactivity*
- *10.2 Chemical stability*
- *Thermal decomposition / conditions to be avoided:* *No decomposition if used according to specifications.*
- *10.3 Possibility of hazardous reactions* *Reacts with acids, alkalis and oxidising agents.*
- *10.4 Conditions to avoid* *No further relevant information available.*
- *10.5 Incompatible materials:* *No further relevant information available.*
- *10.6 Hazardous decomposition products:* *No dangerous decomposition products known.*

**SECTION 11: Toxicological information**

- *11.1 Information on toxicological effects*
- *Acute toxicity*

· *LD/LC50 values relevant for classification:*

*ATE (Acute Toxicity Estimates)*

<i>Oral</i>	<i>LD50</i>	<i>7353 mg/kg</i>
<i>Dermal</i>	<i>LD50</i>	<i>57895 mg/kg</i>

<i>Dermal</i>	<i>LD50</i>	<i>57895 mg/kg</i>
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*111-46-6 2,2'-oxybisethanol*

<i>Oral</i>	<i>LD50</i>	<i>12565 mg/kg (rat)</i>
<i>Dermal</i>	<i>LD50</i>	<i>11890 mg/kg (rabbit)</i>

<i>Dermal</i>	<i>LD50</i>	<i>11890 mg/kg (rabbit)</i>
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*15520-05-5 2,2'-(octylimino)bisethanol*



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Oral	LD50	500 mg/kg (ATE)
<b>112-25-4 2-hexyloxyethanol</b>		
Oral	LD50	1484 mg/kg (rat)
Dermal	LD50	757 mg/kg (rabbit)

**· Primary irritant effect:**

· **Skin corrosion/irritation** Irritant to skin and mucous membranes.

· **Serious eye damage/irritation** Irritating effect.

· **Respiratory or skin sensitisation** No sensitising effects known.

**· Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Irritant

**SECTION 12: Ecological information****· 12.1 Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential** No further relevant information available.

· **12.4 Mobility in soil** No further relevant information available.

**· Additional ecological information:****· General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**· 12.5 Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations****· 13.1 Waste treatment methods****· Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

**· Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

**SECTION 14: Transport information****· 14.1 UN-Number**

· **ADR, ADN, IMDG, IATA** Void

**· 14.2 UN proper shipping name**

· **ADR, ADN, IMDG, IATA** Void

**· 14.3 Transport hazard class(es)**

· **ADR, IMDG, IATA**

· **Class** Void

· **Label** -

· **ADN/R Class:** Void



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· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user · Danger code (Kemler):	Not applicable. -
· EMS Number:	-
· 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	- Code: -
· UN "Model Regulation":	UN-, -

**SECTION 15: Regulatory information**

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - National regulations:
    1. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC
    2. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006  
Local regulations.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Relevant phrases
  - H302 Harmful if swallowed.
  - H312 Harmful in contact with skin.
  - H314 Causes severe skin burns and eye damage.
  - H315 Causes skin irritation.
  - H318 Causes serious eye damage.
  - H373 May cause damage to organs through prolonged or repeated exposure.
- Abbreviations and acronyms:
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - LATA: International Air Transport Association



DPSS – Delphi Diesel Systems Automotive Ltd

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*GHS: Globally Harmonised System of Classification and Labelling of Chemicals*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*ELINCS: European List of Notified Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*Acute Tox. 4: Acute toxicity, Hazard Category 4*

*Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B*

*Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2*

*Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1*

*Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2*

*STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2*