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Safety data sheet according to UK REACH

Printing date 29.07.2024

Version number 7 (replaces version 6)

Revision: 29.07.2024

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

- · 1.1 Product identifier
- · Trade name: TRW DOT 5.1 Brake Fluid ESP
- Article number: PFB750, PFB701, PFB705, PFB720DR, PFB750CE, PFB750SE, PFB750RE, PFB701CE, PFB701SE, PFB701RE, PFB705CE, PFB705SE, PFB705RE, PFB720DRAE, PFB701AP, PFB750AP
- 1.2 Relevant identified uses of the substance or mixture and uses advised against No further relevant information available.
- Application of the substance / the mixture Brake fluid
- · 1.3 Details of the supplier of the safety data sheet
- *Manufacturer/Supplier:* ZF Aftermarket UK Ltd. Abbeyfield Road Lenton Nottingham, NG7 2SX Tel +44 333 240 1123 Fax +44 115 986 92 61 https://www.zf.com
- *Informing department:* Phone: +49 (0) 7541 77 0

E-Mail adress of the competent person for the safety data sheet: reach@dekra.com

• **1.4 Emergency telephone number:** Poison Information Center Munich Phone: +49 (0) 89 - 19 240 Information in German and English

SECTION 2: Hazards identification

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



Repr. 2 H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

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



· Signal word Warning

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0 - <3%

<1%

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Trade name: TRW DOT 5.1 Brake Fluid ESP

 Hazard-determining components of labelling: Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate Hazard statements H361fd Suspected of damaging fertility. Suspected of damaging the unborn child. Precautionary statements P102 Keep out of reach of children. P280 Wear protective gloves / eye protection / face protection. P308+P313 IF exposed or concerned: Get medical advice/attention. P405 Store locked up. P501 Dispose of contents/container in accordance with local/regional/national/international regulations. Additional information: Please refer to further labelling elements in section 15 of this safety data sheet, if applicable. 2.3 Other hazards · Results of PBT and vPvB assessment · PBT: Not applicable. vPvB: Not applicable. 		al	
	Mixture of the substances listed below including additives not requiring identification. Added are corrosion and oxidation inhibitors.		
· Dangerous components:			
CAS: 30989-05-0 EINECS: 250-418-4 Reg.nr.: 01-2119462824-33-X	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	80 - 95%	
CAS: 143-22-6 EINECS: 205-592-6 Reg.nr.: 01-2119475107-38-X	2-[2-(2-butoxyethoxy)ethoxy]ethanol	10 - 15%	
CAS: 1559-34-8 EINECS: 216-322-1 Reg.nr.: 01-2120768763-41-X	3,6,9,12-tetraoxahexadecan-1-ol	1 - 3%	

Methoxydiglycol

🕹 Repr. 1B, H360D Reg.nr.: 01-2119475100-52-X Specific concentration limit: Repr. 1B; H360D: C ≥ 3 %

🕩 Eye Irrit. 2, H319

2-(2-butoxyethoxy)ethanol

· Additional information For the wording of the listed hazard phrases refer to section 16.

CAS: 111-77-3

CAS: 112-34-5

EINECS: 203-906-6

EINECS: 203-961-6

Reg.nr.: 01-2119475104-44-X



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SECTION 4: First aid measures

- · 4.1 Description of first aid measures · General information Show this safety data sheet to the attending physician. Personal protection for the First Aider. Instantly remove any clothing contaminated by the product. · After inhalation Supply fresh air; consult doctor in case of symptoms. In case of unconsciousness bring patient into stable side position for transport. · After skin contact Instantly wash with water and soap and rinse thoroughly. If skin irritation continues, consult a doctor. · After eye contact Use eye protection. Keep eye lids open and rinse them with ample amounts of clean running water for at least 15 minutes. Remove contact lenses if possible. In case of permanent aches and pains please go and see the doctor. · After swallowing Rinse out mouth and then drink plenty of water. Call a doctor immediately. · 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 Extinguishing powder, foam or water jet. Fight larger fires with water jet or alcohol-resistant foam. Use fire fighting measures that suit the environment.
- For safety reasons unsuitable extinguishing agents Water with a full water jet.

• 5.2 Special hazards arising from the substance or mixture

Inhalation of combustion gases may cause serious health hazards. Can be released in case of fire:

- Carbon monoxide and carbon dioxide
- Formation of flammable mixtures of vapours with air possible.
- · 5.3 Advice for firefighters
- · Protective equipment: Wear self-contained breathing apparatus.
- Additional information Remove goods in stock from incendiary zone, if possible. Use water to keep fire exposed containers cool.

SECTION 6: Accidental release measures

• 6.1 Personal precautions, protective equipment and emergency procedures Clear the danger zone. Avoid contact with the product.



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Ensure adequate ventilation

- Particular danger of slipping on leaked/spilled product.
- · For non-emergency personnel Evacuate personnel to safe area.
- · For emergency responders Put on suitable personal protective equipment.
- · 6.2 Environmental precautions: Prevent from spreading (e.g. by damming-in or oil barriers). Do not allow to enter drainage system, 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). Dispose of contaminated material as waste according to section 13.
- · 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 information on disposal.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling Open and handle container with care. Prevent formation of aerosols. Ensure good ventilation/exhaustion at the workplace. Information about protection against explosions and fires: The product forms flammable fumes when heated.

· Handling

The usual precautionary measures should be adhered to general rules for handling chemicals. Do not eat, drink or smoke while working. Avoid direct contact with eyes, skin and clothing.

Wash hands during breaks and at the end of the work.

- · 7.2 Conditions for safe storage, including any incompatibilities
- · Storage
- · Requirements to be met by storerooms and containers: Store cool and dry in well sealed containers. Store only in the original container. Ensure sufficient ventilation.
- · Information about storage in one common storage facility: Store away from oxidising agents. Keep away from food, drink and animal feeding stuffs.
- · Further information about storage conditions: Protect from humidity and keep away from water. Protect from heat and direct sunlight. Protect from frost. Recommended storage temperature: 10-30 °C
- 7.3 Specific end use(s) Brake fluid

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SECTION 8: Exposure controls/personal protection

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· 8.1 Control parameters · Components with limit values that require monitoring at the workplace:

	WEL: workplace exposure limit OEL: Occupational Exposure Limit		
ſ	111-77-3 Methoxydiglycol		
	WEL (Great Britain)	Long-term value: 50.1 mg/m³, 10 ppm Sk	
	IOELV (European Union)	Long-term value: 50.1 mg/m³, 10 ppm Skin	
	OEL (Ireland)	Long-term value: 50.1 mg/m³, 10 ppm Skin, IOELV	
Ī	112-34-5 2-(2-butoxyethoxy)ethanol		
	WEL (Great Britain)	Short-term value: 101.2 mg/m ³ , 15 ppm Long-term value: 67.5 mg/m ³ , 10 ppm	
	IOELV (European Union)	Short-term value: 101.2 mg/m³, 15 ppm Long-term value: 67.5 mg/m³, 10 ppm	
	OEL (Ireland)	Short-term value: 101.2 mg/m³, 12 ppm Long-term value: 67.5 mg/m³, 10 ppm IOELV	

• Additional information: The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· Individual protection measures, such as personal protective equipment

• General protective and hygienic measures Keep away from foodstuffs, beverages and food. Take off all contaminated clothing immediately. Wash hands during breaks and at the end of the work. Avoid contact with the eyes and skin.

- **Breathing equipment:** Not necessary if room is well-ventilated. Use breathing protection only when aerosol or mist is formed. Filter A/P2.
- Hand protection



Protective gloves.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Only use chemical-protective gloves with CE-labelling of category III (EN 374).

- Material of gloves
- Butyl rubber, BR
- Nitrile rubber, NBR
- · 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.



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Tightly sealed safety glasses.

SECTION 9: Physical and chemical properties

 9.1 Information on basic physical and chemical General Information 	properties
· Colour:	Amber coloured
· Odour:	Mild
· Odour threshold:	Not determined.
• Melting point/freezing point:	< -50 °C (SAE J 1703)
· Boiling point or initial boiling point and boiling	, , , , , , , , , , , , , , , , , , ,
range	> 260 °C (SAE J 1703)
· Flammability	Not applicable.
 Lower and upper explosion limit 	
· Lower:	Not determined.
· Flash point:	> 120 °C (IP 35)
Auto-ignition temperature:	> 280 °C (ASTM D 286)
 Decomposition temperature: 	> 300 °C
SADT	300 °C
· SADT · pH at 20 °C	7 10 5 (845 1 1702)
· Viscosity:	7 - 10.5 (SAE J 1703)
· Kinematic viscosity at 20 °C	5 - 10 mm²/s
· dynamic:	Not determined.
· Solubility	
· Water:	Fully miscible
· Partition coefficient n-octanol/water (log value)	1.5 log POW
	1.5
· Vapour pressure:	Not determined.
 Density and/or relative density 	
· Density at 20 °C	1.02 - 1.07 g/cm ³ (DIN 51757)
· 9.2 Other information	
· Appearance:	
· Form:	Fluid
 Important information on protection of health 	
and environment, and on safety.	
· Self-inflammability:	Product is not selfigniting.
• Explosive properties:	Product is not explosive.
Solvent content: Organia solvente:	1 - < 4 %
· Organic solvents:	, ,
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· Change in condition	Not determined	
· Evaporation rate	Not determined.	
· Information with regard to physical hazard		
classes		
· Explosives	Void	
· Flammable gases	Void	
· Aerosols	Void	
· Oxidising gases	Void	
· Gases under pressure	Void	
· Flammable liquids	Void	
· Flammable solids	Void	
 Self-reactive substances and mixtures 	Void	
· Pyrophoric liquids	Void	
· Pyrophoric solids	Void	
• Self-heating substances and mixtures	Void	
· Substances and mixtures, which emit flam	nable	
gases in contact with water	Void	
· Oxidising liquids	Void	
· Oxidising solids	Void	
· Organic peroxides	Void	
· Corrosive to metals	Void	
 Desensitised explosives 	Void	

SECTION 10: Stability and reactivity

- 10.1 Reactivity No further relevant information available.
- · 10.2 Chemical stability
- Thermal decomposition / conditions to be avoided:
- No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Possible formation of peroxide Reacts with light alloys to form hydrogen
- · 10.4 Conditions to avoid Heat.
- 10.5 Incompatible materials: Avoid contact with strong oxidizing agents. Can attack paints and coatings as well as some platics and rubber.
 10.6 Hazardous decomposition products:
- None in case of intended use and storage in compliance with instructions.

SECTION 11: Toxicological information

- 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
- Acute toxicity Based on available data, the classification criteria are not met.

· LD/LC50 values that are relevant for classification:

30989-05-0 Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate

Oral LD50 > 2,000 mg/kg (Rat) (OECD 401)

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143-22-6 2- Oral L Dermal L 1559-34-8 3 Oral L Dermal L Dermal L 11579-34-8 3 Oral L Dermal L 111-77-3 M		ng/kg (rabbit)
Dermal L 1559-34-8 3 Oral L Dermal L 111-77-3 M	_D50 3,540 n 3,6,9,12-tetra	ng/kg (rabbit)
1559-34-8 3 Oral L Dermal L 111-77-3 Me	3,6,9,12-tetra	
Oral L Dermal L 111-77-3 Me		avahavadaaan 1 al
Dermal L	D50 2.630 n	
111-77-3 M	, 5	ng/kg (Rat)
	_D50 3,540 n	ng/kg (rabbit)
Oral I	ethoxydiglyd	ol
Jiai L	_D50 7,128 n	ng/kg (mouse) (OECD 201)
Dermal L	_D50 9,404 n	ng/kg (rabbit) (OECD 402)
Inhalative L	_C0 > 1.2 m	g/l/6h (Rat) (OECD 403)
112-34-5 2-	(2-butoxyeth	oxy)ethanol
Oral L	_D50 5,660 n	ng/kg (Rat)
Dermal L	_D50 2,764 n	ng/kg (rabbit) (OECD 402)
Inhalative L	_C0 67.5 mg	y/l/0.5h (human)
Aspiration	hazard Base	re Based on available data, the classification criteria are not met. d on available data, the classification criteria are not met. I information:
Repeated c	dose toxicity	
143-22-6 2-	[2-(2-butoxy	ethoxy)ethoxy]ethanol
Oral N	NOAEL (90d)	500 mg/kg bw/day (Rat)
111-77-3 M	ethoxydiglyc	ol
Oral N	NOAEL (28d)	900 mg/kg bw/day (Rat) (OECD 407)
Dermal N	NOAEL (90d)	40 mg/kg bw/day (guinea pig) (OECD 411)
Inhalative	NOAEC (90d)	> 1,060 mg/m³ (Rat) (OECD 413)
112-34-5 2-	(2-butoxyeth	oxy)ethanol
Oral N	NOAEL (90d)	250 mg/kg bw/day (Rat) (OECD 408)
Dermal N	NOAEL (90d)	2,000 mg/kg bw/day (Rat) (OECD 411)
Inhalative N	NOAEC (90d)	94 mg/m³ (Rat) (OECD 413) Vapour

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· 11.2 Information on other hazards

Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:	
30989-05-0 Tr	is[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate
EC50	> 211.2 mg/l/48h (Daphnia magna) (OECD 202)
LC50	> 222.2 mg/l/96h (Oncorhynchus mykiss) (OECD 203)
EC50 > 224.4 mg/l/72h (Raphidocelis subcapitata) (OECD 201)	
143-22-6 2-[2-	(2-butoxyethoxy)ethoxy]ethanol
EC50 (static)	2,210 mg/l/48h (Daphnia magna) (EU C.2)
EC0 (static)	2,150 mg/l/96h (fish) (DIN 38 412-L15)
LC50	2,400 mg/l/96h (Pimephales promelas)
	2,200 - 4,600 mg/l/96h (fish) (DIN 38412-15)
EC50 (static)	840 mg/l/72h (Desmodesmus subspicatus) (OECD 201)
NOEC (static)	1,000 mg/l/96h (fish) (DIN 38 412-L15)
1559-34-8 3,6	9,12-tetraoxahexadecan-1-ol
EC50	> 3,200 mg/l/48h (Daphnia magna) (OECD 202)
LC50	> 1,800 mg/l/96h (Scophthalmus maximus) (OECD 203)
EC50	2,490 mg/l/72h (Algae)
111-77-3 Meth	noxydiglycol
EC50 (static)	1,192 mg/l/48h (Daphnia magna)
EC50 (static)	> 1,000 mg/l/96h (Selenastrum capricornutum) (OECD 201)
LC50 (static)	5,741 mg/l/96h (Pimephales promelas)
112-34-5 2-(2-	butoxyethoxy)ethanol
EC50 (static)	> 100 mg/l/48h (Daphnia magna) (OECD 202)
EC50 (static)	> 100 mg/l/96h (Desmodesmus subspicatus) (OECD 201)
LC50 (static)	1,300 mg/l/96h (Lepomis macrochirus) (OECD 203)
	nce and degradability Easily biodegradable
	ation: There are no data available about the preparation.
	mulative potential

Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.

- 12.4 Mobility in soil No further relevant information available.
- · 12.5 Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- 12.6 Endocrine disrupting properties
- The product does not contain substances with endocrine disrupting properties.
- 12.7 Other adverse effects No further relevant information available.



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· Additional ecological information:

· General notes:

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

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system. The waste code numbers mentioned are recommendations based on the probable use of the product.

· Europear	· European waste catalogue	
16 00 00	WASTES NOT OTHERWISE SPECIFIED IN THE LIST	
16 01 00	end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)	
16 01 13*	brake fluids	
HP4	Irritant - skin irritation and eye damage	
HP10	Toxic for reproduction	

· Uncleaned packagings:

· Recommendation:

Disposal must be made according to official regulations.

Dispose of packaging according to regulations on the disposal of packagings.

Non contaminated packagings can be used for recycling.

Cleaned packing materials have to be admitted to local recycling circuits.

· Recommended cleaning agent: Water, if necessary with cleaning agent.

SECTION 14: Transport information

· 14.1 UN number or ID number · ADR/RID, ADN, IMDG, IATA	Void	
 14.2 UN proper shipping name ADR/RID, ADN, IMDG, IATA 	Void	
· 14.3 Transport hazard class(es)		
· ADR/RID, ADN, IMDG, IATA · Class	Void	
· 14.4 Packing group · ADR/RID, IMDG, IATA	Void	
 14.5 Environmental hazards: Marine pollutant: 	No	
· 14.6 Special precautions for user	Not applicable.	
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· 14.7 Maritime transport in bulk according to IMO		
instruments	Not applicable.	
· Transport/Additional information:	Not dangerous according to the above specification	
· UN "Model Regulation":	Void	

SECTION 15: Regulatory information

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

Poisons Act

· Regulated explosives precursors
None of the ingredients is listed.
· Regulated poisons
None of the ingredients is listed.
· Reportable explosives precursors
None of the ingredients is listed.
· Reportable poisons
None of the ingredients is listed.
 Chemical safety assessment Named dangerous substances - ANNEX I None of the ingredients is listed. REGULATION (EU) 2019/1148
• Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))
None of the ingredients is listed.
· Annex II - REPORTABLE EXPLOSIVES PRECURSORS

None of the ingredients is listed.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H360D May damage the unborn child.

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

· Department issuing data specification sheet:

DEKRA This Safety Data Sheet has been drawn up in cooperation with: DEKRA Assurance Services GmbH, Hanomagstr. 12, D-30449 Hanover, Germany, phone: (+49) 511 42079 - 0, reach@dekra.com.



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(Contd. from page 11) © DEKRA Assurance Services GmbH. Changing this documents is subject to explicit acceptance by DEKRA Assurance Services GmbH. Abbreviations and acronyms: ADR: Accord relatif au transport international 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 PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative Eye Dam. 1: Serious eye damage/eye irritation - Category 1 Eye Irrit. 2: Serious eye damage/eye irritation - Category 2 Repr. 1B: Reproductive toxicity – Category 1B Repr. 2: Reproductive toxicity – Category 2 Sources Because of lack on recipe information, this SDS was created on the basis of the supplier's SDS. * * Data compared to the previous version altered.