

**Safety Data Sheet**

according to UK REACH Regulation

**Mintex Brake fluid Dot 4**

Revision date: 07.02.2023

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Mintex Brake fluid Dot 4

**Product code:**MBF4-0250B  
MBF4-0500B  
MBF4-1000B  
MBF4-5000B, MBF4-20000B**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**Hydraulic (functional) fluids  
PC-TEC-8: Hydraulic fluids, including brake and transmission fluids**1.3. Details of the supplier of the safety data sheet****Manufacturer**Company name: TMD Friction Services GmbH  
Street: Schlebuscher Str. 99  
Place: D-51381 Leverkusen  
Telephone: +49 (2171)703-0  
e-mail: serviceline@tmdfriction.com  
Contact person: Hr. Beier  
e-mail: serviceline@tmdfriction.com  
Internet: www.tmdfriction.com

Telephone: +49 (2171)9113-7373

**Supplier**Company name: TMD Friction UK Ltd  
Street: 46-47, Hardwick Grange  
Place: Woolston, Warrington WA1 4RF  
Telephone: 03300 583908**1.4. Emergency telephone number:**

GIZ Bonn: +49 (0)228-19240 (24/7)

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GB CLP Regulation**Eye Irrit. 2; H319  
Repr. 2; H361d

Full text of hazard statements: see SECTION 16.

**2.2. Label elements****GB CLP Regulation****Hazard components for labelling**

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

**Signal word:** Warning**Pictograms:**

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#### Hazard statements

H319 Causes serious eye irritation.  
 H361d Suspected of damaging the unborn child.

#### Precautionary statements

P101 If medical advice is needed, have product container or label at hand.  
 P102 Keep out of reach of children.  
 P202 Do not handle until all safety precautions have been read and understood.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.  
 P308+P313 IF exposed or concerned: Get medical advice/attention.  
 P405 Store locked up.  
 P501 Dispose of waste according to applicable legislation.

#### 2.3. Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

This material is combustible, but will not ignite readily.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

##### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate			20 - 30 %
	250-418-4		01-2119462824-33	
	Repr. 2; H361			
143-22-6	2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutylether; butoxytriethylene glycol			20 - < 30 %
	205-592-6	603-183-00-0	01-2119475107-38	
	Eye Dam. 1; H318			
9004-77-7	Polyethylene glycol butyl ether			5 - 10 %
	500-012-0			
	Eye Irrit. 2; H319			
111-46-6	2,2'-oxybisethanol; diethylene glycol			< 10 %
	203-872-2	603-140-00-6	01-2119457857-21	
	Acute Tox. 4; H302			
112-34-5	2-(2-butoxyethoxy)ethanol; diethylene glycol monobutyl ether			< 3 %
	203-961-6	603-096-00-8	01-2119475104-44	
	Eye Irrit. 2; H319			
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether			< 3 %
	203-906-6	603-107-00-6	01-2119475100-52	
	Repr. 1B; H360D			

Full text of H and EUH statements: see section 16.

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**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
143-22-6	205-592-6	2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutylether; butoxytriethylene glycol	20 - < 30 %
		Eye Dam. 1; H318: >= 30 - 100 Eye Irrit. 2; H319: >= 20 - < 30	
9004-77-7	500-012-0	Polyethylene glycol butyl ether	5 - 10 %
		Eye Irrit. 2; H319: >= 20 - 100	
111-46-6	203-872-2	2,2'-oxybisethanol; diethylene glycol	< 10 %
		oral: ATE = 500 mg/kg	
111-77-3	203-906-6	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether	< 3 %
		Repr. 1B; H360D: >= 3 - 100	

**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

When in doubt or if symptoms are observed, get medical advice. Never give anything by mouth to an unconscious person or a person with cramps.

**After inhalation**

Provide fresh air. Medical treatment necessary.

**After contact with skin**

Wash with plenty of water. Immediately remove any contaminated clothing, shoes or stockings. Medical treatment necessary.

Clean with detergents. Avoid solvent cleaners.

**After contact with eyes**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. Remove contact lenses, if present and easy to do. Continue rinsing.

**After ingestion**

Rinse mouth immediately and drink plenty of water. Observe risk of aspiration if vomiting occurs. Do NOT induce vomiting. Immediately call a doctor.

Following ingestion large scale (Manufacturer): Immediately call a doctor. Alcohol (40 %) 90 - 120 mL (2 mg/kg bw)

**4.2. Most important symptoms and effects, both acute and delayed**

No information available.

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

Treat symptomatically.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Water mist, alcohol resistant foam, Dry extinguishing powder, Carbon dioxide (CO<sub>2</sub>).

Co-ordinate fire-fighting measures to the fire surroundings.

**Unsuitable extinguishing media**

Full water jet

**5.2. Special hazards arising from the substance or mixture**

This material is combustible, but will not ignite readily.

In case of fire may be liberated: Carbon monoxide, Carbon dioxide (CO<sub>2</sub>), Pyrolysis products, toxic.

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus. Full protection suit.

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#### Additional information

Suppress gases/vapours/mists with water spray jet. Use water spray jet to protect personnel and to cool endangered containers. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

## SECTION 6: Accidental release measures

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

#### General advice

Do not breathe gas/vapour/aerosol. Avoid contact with skin, eyes and clothes. Evacuate area. Remove persons to safety. Special danger of slipping by leaking/spilling product.

#### For non-emergency personnel

Provide adequate ventilation. Use personal protection equipment.

#### For emergency responders

Wear personal protection equipment (refer to section 8).

### 6.2. Environmental precautions

Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers). In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

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

#### For containment

Stop leak if safe to do so. Cover drains.

#### For cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

Clean with detergents. Avoid solvent cleaners.

#### Other information

Clean contaminated articles and floor according to the environmental legislation.

### 6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Advice on safe handling

Provide adequate ventilation. Avoid contact with skin, eyes and clothes. Do not breathe gas/vapour/aerosol. Wear personal protection equipment.

#### Advice on protection against fire and explosion

Usual measures for fire prevention.

#### Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

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

#### Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations.

#### Hints on joint storage

Do not store together with: Acid, alkali (Base), Oxidising agent, Reducing agent.

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#### Further information on storage conditions

storage temperature: 18 - 23 °C

#### 7.3. Specific end use(s)

Hydraulic (functional) fluids  
 PC-TEC-8: Hydraulic fluids, including brake and transmission fluids

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Exposure limits (EH40)

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
112-34-5	2-(2-Butoxyethoxy)ethanol	10	67.5		TWA (8 h)	WEL
		15	101.2		STEL (15 min)	WEL
111-77-3	2-(2-Methoxyethoxy)ethanol	10	50.1		TWA (8 h)	WEL
111-46-6	2,2'-Oxydiethanol	23	101		TWA (8 h)	WEL

##### DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate			
Worker DNEL, long-term		dermal	systemic	8,3 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	29,1 mg/m <sup>3</sup>
143-22-6	2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutylether; butoxytriethylene glycol			
Worker DNEL, long-term		dermal	systemic	50 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	195 mg/m <sup>3</sup>
111-46-6	2,2'-oxybisethanol; diethylene glycol			
Worker DNEL, long-term		dermal	systemic	106 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	60 mg/m <sup>3</sup>
112-34-5	2-(2-butoxyethoxy)ethanol; diethylene glycol monobutyl ether			
Worker DNEL, long-term		dermal	systemic	20 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	67 mg/m <sup>3</sup>
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether			
Worker DNEL, long-term		dermal	systemic	0,53 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	50,1 mg/m <sup>3</sup>

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#### PNEC values

CAS No	Substance	Value
	Environmental compartment	
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	
	Micro-organisms in sewage treatment plants (STP)	100 mg/l
143-22-6	2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutylether; butoxytriethylene glycol	
	Micro-organisms in sewage treatment plants (STP)	200 mg/l
111-46-6	2,2'-oxybisethanol; diethylene glycol	
	Micro-organisms in sewage treatment plants (STP)	199,5 mg/l
112-34-5	2-(2-butoxyethoxy)ethanol; diethylene glycol monobutyl ether	
	Micro-organisms in sewage treatment plants (STP)	200 mg/l
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether	
	Micro-organisms in sewage treatment plants (STP)	10000 mg/l

#### 8.2. Exposure controls



##### Appropriate engineering controls

Provide adequate ventilation as well as local exhaust at critical locations.

##### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Wear eye/face protection. Eye glasses with side protection (EN 166)

##### Hand protection

Wear suitable gloves tested to EN374.

penetration time (maximum wearing period): > 480 min.

Suitable material: Butyl caoutchouc (butyl rubber)

Thickness of glove material: 0,3 mm

Suitable material: NBR (Nitrile rubber)

Thickness of glove material: 0,2 mm

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

##### Skin protection

Use of protective clothing.

##### Respiratory protection

In case of inadequate ventilation wear respiratory protection.

##### Thermal hazards

No information available.

##### Environmental exposure controls

Do not allow to enter into surface water or drains.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state: Liquid

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Colour:	amber
Odour:	characteristic
Odour threshold:	not applicable
Melting point/freezing point:	< -50 °C
Boiling point or initial boiling point and boiling range:	> 260 °C
Flammability:	> 280 °C not applicable
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Flash point:	> 100 °C
Auto-ignition temperature:	not determined
Decomposition temperature:	300 °C
pH-Value:	7 - 10,5
Viscosity / kinematic: (at 20 °C)	5 - 10 mm <sup>2</sup> /s
Water solubility:	miscible
Solubility in other solvents	not determined
Partition coefficient n-octanol/water:	1,50
Vapour pressure: (at 20 °C)	1,00 hPa
Density:	1,02 - 1,07 g/cm <sup>3</sup>
Relative vapour density:	not determined
Particle characteristics:	not applicable

**9.2. Other information****Information with regard to physical hazard classes**

Oxidizing properties

The product is not: oxidising.

**Other safety characteristics**

Evaporation rate: (n-Butyl acetate=100) 0,01

**Further Information**

Wet boiling point: &lt; 165 °C

**SECTION 10: Stability and reactivity****10.1. Reactivity**

No hazardous reaction when handled and stored according to provisions.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

No hazardous reaction when handled and stored according to provisions.

**10.4. Conditions to avoid**

Keep away from heat.

**10.5. Incompatible materials**

Acid, alkali (Base), Oxidising agent, Reducing agent.

**10.6. Hazardous decomposition products**In case of fire may be liberated: Carbon monoxide, Carbon dioxide (CO<sub>2</sub>), Pyrolysis products, toxic.**SECTION 11: Toxicological information**

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#### 11.1. Information on hazard classes as defined in GB CLP Regulation

##### Acute toxicity

Based on available data, the classification criteria are not met.

Absorption large scale (Manufacturer): May cause damage to organs. (kidneys)

##### ATEmix tested

	Dose	Species	Source
LD50, oral	> 5000 mg/kg	Rat	Manufacturer
LD50, dermal	> 3000 mg/kg	Rabbit	Manufacturer

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
111-46-6	2,2'-oxybisethanol; diethylene glycol				
	oral	ATE 500 mg/kg			

##### Irritation and corrosivity

Causes serious eye irritation.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

##### Sensitising effects

Based on available data, the classification criteria are not met.

##### Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging the unborn child.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

##### STOT-single exposure

Based on available data, the classification criteria are not met.

##### STOT-repeated exposure

Based on available data, the classification criteria are not met.

##### Aspiration hazard

Based on available data, the classification criteria are not met.

##### Information on likely routes of exposure

oral, Skin contact, Eye contact, Inhalation.

#### 11.2. Information on other hazards

##### Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

##### Other information

Absorption large scale (Manufacturer)

The following symptoms may occur: Depression of central nervous system, Gastrointestinal complaints, Headache, Nausea.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Based on available data, the classification criteria are not met.

The product is not: Ecotoxic.

#### 12.2. Persistence and degradability

Product is biodegradable. (OECD 302B)

#### 12.3. Bioaccumulative potential

Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.



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#### **12.4. Mobility in soil**

Soluble in: Water. If product enters soil, it will be mobile and may contaminate groundwater.

#### **12.5. Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

#### **12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

#### **12.7. Other adverse effects**

No information available.

#### **Further information**

Avoid release to the environment.

### SECTION 13: Disposal considerations

#### **13.1. Waste treatment methods**

##### **Disposal recommendations**

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

##### **Contaminated packaging**

Hazardous waste according to Directive 2008/98/EC (waste framework directive). Handle contaminated packages in the same way as the substance itself.

### SECTION 14: Transport information

#### **Land transport (ADR/RID)**

##### **14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

##### **14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

##### **14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

##### **14.4. Packing group:**

No dangerous good in sense of this transport regulation.

#### **Inland waterways transport (ADN)**

##### **14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

##### **14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

##### **14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

##### **14.4. Packing group:**

No dangerous good in sense of this transport regulation.

#### **Marine transport (IMDG)**

##### **14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

##### **14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

##### **14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

##### **14.4. Packing group:**

No dangerous good in sense of this transport regulation.

#### **Air transport (ICAO-TI/IATA-DGR)**

##### **14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

##### **14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.

##### **14.3. Transport hazard class(es):**

No dangerous good in sense of this transport regulation.

##### **14.4. Packing group:**

No dangerous good in sense of this transport regulation.

#### **14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

#### **14.6. Special precautions for user**

No information available.

#### **14.7. Maritime transport in bulk according to IMO instruments**

not applicable

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**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 54, Entry 55, Entry 75

2010/75/EU (VOC): &lt; 35 %

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

**National regulatory information**

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D):

1 - slightly hazardous to water

**15.2. Chemical safety assessment**

Chemical safety assessments for substances in this mixture were not carried out.

**SECTION 16: Other information****Changes**

This data sheet contains changes from the previous version in section(s): 4,6,7,8,9,11,12,16.

**Abbreviations and acronyms**

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

UN: United Nations

CAS: Chemical Abstracts Service

DNEL: Derived No Effect Level

DMEL: Derived Minimal Effect Level

PNEC: Predicted No Effect Concentration

ATE: Acute toxicity estimate

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

LL50: Lethal loading, 50%

EL50: Effect loading, 50%

EC50: Effective Concentration 50%

ErC50: Effective Concentration 50%, growth rate

NOEC: No Observed Effect Concentration

BCF: Bio-concentration factor

PBT: persistent, bioaccumulative, toxic

vPvB: very persistent, very bioaccumulative

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Regulations concerning the international carriage of dangerous goods by rail

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation  
intérieures)

IMDG: International Maritime Code for Dangerous Goods

EmS: Emergency Schedules

MFAG: Medical First Aid Guide

IATA: International Air Transport Association

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ICAO: International Civil Aviation Organization

MARPOL: International Convention for the Prevention of Marine Pollution from Ships

IBC: Intermediate Bulk Container

VOC: Volatile Organic Compounds

SVHC: Substance of Very High Concern

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

**Classification for mixtures and used evaluation method according to GB CLP Regulation**

Classification	Classification procedure
Eye Irrit. 2; H319	Calculation method
Repr. 2; H361d	Calculation method

**Relevant H and EUH statements (number and full text)**

H302	Harmful if swallowed.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H360D	May damage the unborn child.
H361	Suspected of damaging fertility or the unborn child.
H361d	Suspected of damaging the unborn child.

**Further Information**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*