

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Mintex Brake fluid Dot 4

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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**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

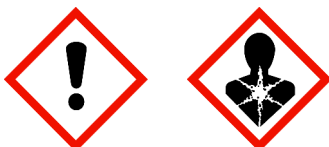
Telephone: +49 (2171)9113-7373

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****Regulation (EC) No. 1272/2008**Hazard categories:
Serious eye damage/eye irritation: Eye Irrit. 2
Reproductive toxicity: Repr. 2
Hazard Statements:
Causes serious eye irritation.
Suspected of damaging the unborn child.**2.2. Label elements****Regulation (EC) No. 1272/2008****Hazard components for labelling**

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

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

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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	
	GHS Classification			
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate			20 - 30 %
	250-418-4		01-2119462824-33	
	Repr. 2; H361d			
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. 2; H361d			

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

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		

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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.

After 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 (CO₂).

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 (CO₂), Pyrolysis products, toxic.

5.3. Advice for firefighters

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

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**

Provide adequate ventilation. Do not breathe gas/vapour/aerosol. Use personal protection equipment. Evacuate area. Remove persons to safety. Special danger of slipping by leaking/spilling product.

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.

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6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. 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.

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.

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.

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 ³	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

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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 ³
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 ³
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 ³
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 ³
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 ³

PNEC values

CAS No	Substance	Value
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.

Protective and hygiene measures

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. Avoid contact with skin, eyes and clothes. Do not breathe gas/vapour/aerosol.

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Eye/face protection

Wear eye protection/face protection. Eye glasses with side protection (DIN 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.

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
Colour:	amber
Odour:	characteristic
Odour threshold:	not applicable
pH-Value:	7 - 10,5

Changes in the physical state

Melting point:	< -50 °C
Boiling point or initial boiling point and boiling range:	> 260 °C
Flash point:	> 100 °C

Flammability

Solid:	> 280 °C
Gas:	not applicable

Explosive properties

The product is not: Explosive.

Lower explosion limits:	not determined
Upper explosion limits:	not determined
Auto-ignition temperature:	not determined

Self-ignition temperature

Solid:	not determined
Gas:	not applicable

Decomposition temperature:	300 °C
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Oxidizing properties

The product is not: oxidising.

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Vapour pressure: (at 20 °C)	1,00 hPa
Density:	1,02 - 1,07 g/cm ³
Water solubility:	miscible
Solubility in other solvents not determined	
Partition coefficient n-octanol/water:	1,50
Viscosity / dynamic:	not determined
Viscosity / kinematic: (at 20 °C)	5 - 10 mm ² /s
Relative vapour density:	not determined
Evaporation rate:	(n-butyl acetate=100) 0,01

9.2. Other information

Wet boiling point: < 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 (CO₂), Pyrolysis products, toxic.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

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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. (Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate; 2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether)

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.

Practical experience**Other observations**

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**

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.

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 REACH, annex XIII.

12.6. 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:**

No dangerous good in sense of this transport regulation.

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<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.
Inland waterways transport (ADN)	
<u>14.1. UN number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.
Marine transport (IMDG)	
<u>14.1. UN number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.
Air transport (ICAO-TI/IATA-DGR)	
<u>14.1. UN number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.
<u>14.5. Environmental hazards</u>	
ENVIRONMENTALLY HAZARDOUS:	No
<u>14.6. Special precautions for user</u>	No information available.
<u>14.7. Transport in bulk according to Annex II of Marpol and the IBC Code</u>	not applicable

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

2010/75/EU (VOC): < 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**Abbreviations and acronyms**

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

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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
 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 table at <http://abbrev.esdscom.eu>

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

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.
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.)