

Safety Data Sheet

according to GSO 2654:2021

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**

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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

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	Telephone: +49 (2171)9113-7373
e-mail:	serviceline@tmdfriction.com	
Internet:	www.tmdfriction.com	

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****GSO 2654:2021**Eye Irrit. 2; H319
Repr. 2; H361d

Full text of hazard statements: see SECTION 16.

2.2. Label elements**GSO 2654:2021****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.
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

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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

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
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	30 - < 35 %
	250-418-4	
	Repr. 2; H361	
143-22-6	2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutylether; butoxytriethylene glycol	25 - < 30 %
	205-592-6	603-183-00-0
	Eye Dam. 1; H318	
9004-77-7	Polyethylene glycol butyl ether	10 - < 15 %
	500-012-0	
	Eye Irrit. 2; H319	
111-46-6	2,2'-oxybisethanol; diethylene glycol	5 - < 10 %
	203-872-2	603-140-00-6
	Acute Tox. 4; H302	
112-34-5	2-(2-butoxyethoxy)ethanol; diethylene glycol monobutyl ether	1 - < 5 %
	203-961-6	603-096-00-8
	Eye Irrit. 2; H319	
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether	1 - < 5 %
	203-906-6	603-107-00-6
	Repr. 1B; H360D	

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	25 - < 30 %
		Eye Dam. 1; H318: >= 30 - 100 Eye Irrit. 2; H319: >= 20 - < 30	
9004-77-7	500-012-0	Polyethylene glycol butyl ether	10 - < 15 %
		Eye Irrit. 2; H319: >= 20 - 100	
111-46-6	203-872-2	2,2'-oxybisethanol; diethylene glycol	5 - < 10 %
		oral: ATE = 500 mg/kg	
111-77-3	203-906-6	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether	1 - < 5 %
		Repr. 1B; H360D: >= 3 - 100	

SECTION 4: First aid measures

4.1. Description of first aid measures

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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 (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****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).

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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 in a cool, well-ventilated place. Keep only in the original container. Keep locked up. Store in a place accessible by authorized persons only.

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.2. Exposure controls



Appropriate engineering controls

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

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Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear eye/face protection. Eye glasses with side protection

Hand protection

Tested protective gloves must be worn:

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
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 ² /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 ³
Relative vapour density:	not determined
Particle characteristics:	not applicable

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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: < 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 hazard classes as defined in Regulation (EC) No 1272/2008

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.

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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**

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. 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

not applicable

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

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.

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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

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

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 30, Entry 54, Entry 55, Entry 75

Employment restrictions:

Observe restrictions to employment for juveniles. Observe employment restrictions for expectant or nursing mothers.

Additional information

Observe in addition any national regulations!

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): 3,4,6,7,8,9,11,12,13,14,15.

Abbreviations and acronyms

ACGIH: American Conference of Governmental Industrial Hygienist

ATE: Acute toxicity estimate

BCF: Bio-concentration factor

CAS: Chemical Abstracts Service

DGR: Dangerous Goods Regulations

DNEL: Derived No Effect Level

DMEL: Derived Minimal Effect Level

PNEC: Predicted No Effect Concentration

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EC50: Effective Concentration 50%
 EL50: Effect loading, 50%
 ErC50: Effective Concentration 50%, growth rate
 DNEL: Derived No Effect Level
 DMEL: Derived Minimal Effect Level
 PNEC: Predicted No Effect Concentration
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 IATA: International Air Transport Association
 IBC: Intermediate Bulk Container
 ICAO: International Civil Aviation Organization
 IMDG: International Maritime Code for Dangerous Goods
 LC50: Lethal concentration, 50%
 LD50: Lethal dose, 50%
 LL50: Lethal loading, 50%
 MARPOL: International Convention for the Prevention of Marine Pollution from Ships
 NOEC: No Observed Effect Concentration
 OEL: Occupational Exposure Limit
 PEL: Permissible Exposure Limit
 REL: Recommended Exposure Limit
 STEL: Short-Term Exposure Limit
 TWA: Time weighted average
 UN: United Nations

Classification for mixtures and used evaluation method according to GSO 2654:2021

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.)