

Safety Data Sheet

according to 29 CFR 1910.1200(g)

Mintex Brake Fluid DOT 4

Revision date: 03/01/2024

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1. Identification**Product identifier**

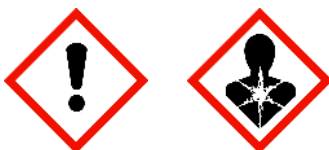
Mintex Brake Fluid DOT 4

Product code:

MBF4-0250B, MBF4-0500B, MBF4-1000B, MBF4-5000B, MBF4-20000B

Recommended use of the chemical and restrictions on use**Use of the substance/mixture**Hydraulic (functional) fluids
PC-TEC-8: Hydraulic fluids, including brake and transmission fluids**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	

Emergency phone number: GIZ Bonn: +49 (0)228-19240 (24/7)**2. Hazard(s) identification****Classification of the chemical****29 CFR Part 1910.1200**Serious eye damage/eye irritation: Eye Irrit. 2A
Reproductive toxicity: Repr. 2**Label elements****29 CFR Part 1910.1200****Signal word:** Warning**Pictograms:****Hazard statements**Causes serious eye irritation
Suspected of damaging fertility or the unborn child**Precautionary statements**If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Do not handle until all safety precautions have been read and understood.
Wash hands thoroughly after handling.
Wear protective gloves and eye/face protection.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If eye irritation persists: Get medical advice/attention.
If exposed or concerned: Get medical advice/attention.
Store locked up.
Dispose of waste according to applicable legislation.

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Hazards not otherwise classified

This material is combustible, but will not ignite readily.

3. Composition/information on ingredients**Mixtures****Relevant ingredients**

CAS No	Components	Quantity
143-22-6	2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutylether; butoxytriethylene glycol	25 - < 30 %
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	15 - 25 %
111-46-6	2,2'-oxybisethanol; diethylene glycol	5 - 10 %
1559-34-8	3,6,9,12-tetraoxahexadecan-1-ol	5 - 10 %
112-34-5	2-(2-butoxyethoxy)ethanol; diethylene glycol monobutyl ether	1 - 3 %
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether	< 1 %

Further Information

The exact percentage (concentration) of composition has been withheld as a trade secret.

Specific concentration limit (SCL)

CAS No. 143-22-6:

Serious eye damage, Category 1 H318: $\geq 30\%$ Eye irritation, Category 2 H319: $20 - < 30\%$ **4. First-aid measures****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)

Most important symptoms and effects, both acute and delayed

No information available.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Fire-fighting measures**Extinguishing media**

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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

Specific hazards arising from the chemical

This material is combustible, but will not ignite readily.
In case of fire may be liberated: Carbon monoxide, Carbon dioxide (CO₂), Pyrolysis products, toxic.

Special protective equipment and precautions for fire-fighters

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

Additional information

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

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

General advice

Do not breathe gas/vapor/spray. 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).

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.

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.

Reference to other sections

Safe handling: see section 7
Personal protection equipment (PPE): see section 8
Disposal: see section 13

7. Handling and storage

Precautions for safe handling

Advice on safe handling

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

Advice on protection against fire and explosion

Usual measures for fire prevention.

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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.

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

easily soluble
storage temperature: 15 - 30 °C

8. Exposure controls/personal protection

Control parameters

Exposure limits

CAS No	Substance	ppm	mg/m ³	f/cc	Category	Origin
112-34-5	Diethylene glycol monobutyl ether (inhalable fraction and vapor)	10			TWA (8 h)	ACGIH-2023

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

Hand protection

Wear suitable gloves.

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

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.

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Environmental exposure controls

Do not allow to enter into surface water or drains.

9. Physical and chemical properties**Information on basic physical and chemical properties**

Physical state:	Liquid
Color:	amber
Odor:	characteristic
Odour threshold:	not applicable
Melting point/freezing point:	< -50 °C
Boiling point or initial boiling point and boiling range:	> 260 °C
Flammability:	This material is combustible, but will not ignite readily.
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Flash point:	> 100 °C
Auto-ignition temperature:	> 280 °C
Decomposition temperature:	300 °C
pH-Value:	7 - 10,5
Viscosity / kinematic: (at 20 °C)	5 - 10 mm ² /s
Water solubility:	easily soluble
Solubility in other solvents	not determined
Partition coefficient n-octanol/water:	1,50
Vapor pressure: (at 20 °C)	1,00 hPa
Density:	1,02 - 1,07 g/cm ³
Relative vapour density:	not determined
Particle characteristics:	not applicable

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

10. Stability and reactivity**Reactivity**

No hazardous reaction when handled and stored according to provisions.

Chemical stability

Stability: Stable

The product is stable under storage at normal ambient temperatures.

Possibility of hazardous reactions

Hazardous reactions: Will not occur

No hazardous reaction when handled and stored according to provisions.

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Conditions to avoid

Keep away from heat.

Incompatible materials

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

Hazardous decomposition products

In case of fire may be liberated: Carbon monoxide, Carbon dioxide (CO₂), Pyrolysis products, toxic.

11. Toxicological information

Route(s) of Entry

oral, Skin contact, Eye contact, Inhalation.

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

ATEmix calculated

ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

CAS No	Components				
	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.

Sensitizing effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging fertility or the unborn child (Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate)

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

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

Specific target organ toxicity (STOT) - single exposure

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

Specific target organ toxicity (STOT) - repeated exposure

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

Carcinogenicity (OSHA): No ingredient of this mixture is listed.

Carcinogenicity (IARC): No ingredient of this mixture is listed.

Carcinogenicity (NTP): No ingredient of this mixture is listed.

Aspiration hazard

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

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.

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Other information

Absorption large scale (Manufacturer)

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

12. Ecological information**Ecotoxicity**

The product is not: Ecotoxic.

Persistence and degradability

Product is biodegradable. (OECD 302B)

Bioaccumulative potential

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

Mobility in soil

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

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.

Other adverse effects

No information available.

Further information

Avoid release to the environment.

13. Disposal considerations**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.

14. Transport information**U.S. DOT 49 CFR 172.101****Proper shipping name:**

No dangerous good in sense of this transport regulation.

Marine transport (IMDG)**UN number or ID number:**

No dangerous good in sense of this transport regulation.

UN proper shipping name:

No dangerous good in sense of this transport regulation.

Transport hazard class(es):

No dangerous good in sense of this transport regulation.

Packing group:

No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)**UN number or ID number:**

No dangerous good in sense of this transport regulation.

UN proper shipping name:

No dangerous good in sense of this transport regulation.

Transport hazard class(es):

No dangerous good in sense of this transport regulation.

Packing group:

No dangerous good in sense of this transport regulation.

Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

Special precautions for user

No information available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

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15. Regulatory information**U.S. Regulations****National Inventory TSCA**

All ingredients of the mixture are public/active listed or exempted.

National regulatory information

SARA Section 311/312 Hazards:

2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutylether; butoxytriethylene glycol (143-22-6): Immediate (acute) health hazard

2,2'-oxybisethanol; diethylene glycol (111-46-6): Immediate (acute) health hazard

3,6,9,12-tetraoxahexadecan-1-ol (1559-34-8): Immediate (acute) health hazard

2-(2-butoxyethoxy)ethanol; diethylene glycol monobutyl ether (112-34-5): Immediate (acute) health hazard

State Regulations**Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)**

This product can not expose you to chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Additional information

Observe in addition any national regulations!

16. Other information**Hazardous Materials Identification System (HMIS)**

Health: *2

Flammability: 0

Physical Hazard: 0

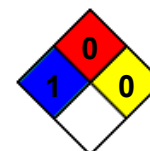
NFPA Hazard Ratings

Health: 1

Flammability: 0

Reactivity: 0

Unique Hazard:

**Changes**

Revision date: 03/01/2024

Revision No: 1,1

This data sheet contains changes from the previous version in section(s): 7,9,15.

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Abbreviations and acronyms

ACGIH: American Conference of Governmental Industrial Hygienists
CFR: Code of Federal Regulations
DOT: Department of Transportation
ICAO: International Civil Aviation Organization
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IARC: International Agency for Research on Cancer
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service
NFPA: National Fire Protection Association
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: permissible exposure limit
REL: recommended exposure limit
SARA: Superfund Amendments and Reauthorization Act
STEL: Short-term exposure limit
TSCA: Toxic Substances Control Act
TWA: time-weighted average
TI: Technical Instructions
DGR: Dangerous Goods Regulations
UN: United Nations
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
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
VOC: Volatile Organic Compounds

Other data

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 relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)