

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

REKTOL DOT 4 Brake Fluid

Revision date: 31.10.2024

Product code: 699000409

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

REKTOL DOT 4 Brake Fluid

UFI: 6S72-2CP6-QP8W-4KSN

1.2. Relevant identified uses of the substance or mixture and uses advised against**Use of the substance/mixture**

brake fluids

1.3. Details of the supplier of the safety data sheet

Company name:	REKTOL GmbH&Co.KG	
Street:	Am Kniep 2	
Place:	D-34497 Korbach	
Telephone:	0049 5631 9530 0	Telefax: 0049 5631 9530 25
E-mail:	info@rektol.de	
Contact person:	Jochen Pohlmann	
E-mail:	info@rektol.de	
Internet:	www.rektol.de	

1.4. Emergency telephone number: 0049 5631 9530 0 (Only available during office hours.)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No 1272/2008**

Eye Irrit. 2; H319

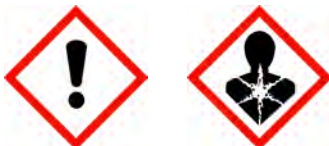
Repr. 2; H361fd

Full text of hazard statements: see SECTION 16.

2.2. Label elements**Regulation (EC) No 1272/2008****Hazard components for labelling**

2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutylether; butoxytriethylene glycol

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

Signal word: Warning**Pictograms:****Hazard statements**

H319

Causes serious eye irritation.

H361fd

Suspected of damaging fertility. 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.

P264

Wash hands thoroughly after handling.

P301+P310

IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P337+P313

If eye irritation persists: Get medical advice/attention.

P305+P351+P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501

Dispose of contents/container to an appropriate recycling or disposal facility.

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2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Relevant ingredients**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
143-22-6	2-[2-(2-butoxyethoxy)ethoxy]ethanol; TEGBE; triethylene glycol monobutylether; butoxytriethylene glycol			35 - < 40 %
	205-592-6	603-183-00-0		
	Eye Dam. 1; H318			
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate			20 - < 25 %
	250-418-4		01-2119462824-33	
	Repr. 2; H361d			
1559-34-8	3,6,9,12-tetraoxahexadecan-1-ol			5 - < 10 %
	216-322-1			
	Eye Irrit. 2; H319			
111-46-6	2,2'-oxybisethanol; diethylene glycol			<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			<3 %
	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	35 - < 40 %
		Eye Dam. 1; H318: >= 30 - 100 Eye Irrit. 2; H319: >= 20 - < 30	
30989-05-0	250-418-4	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	20 - < 25 %
		dermal: LD50 = >2000 mg/kg; oral: LD50 = >2000 mg/kg	
111-46-6	203-872-2	2,2'-oxybisethanol; diethylene glycol	<10 %
		dermal: LD50 = 11890 mg/kg; oral: ATE = 500 mg/kg	
112-34-5	203-961-6	2-(2-butoxyethoxy)ethanol; diethylene glycol monobutyl ether	1 - < 5 %
		dermal: LD50 = 4120 mg/kg; oral: LD50 = 5660 mg/kg	
111-77-3	203-906-6	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether	<3 %
		inhalation: LC50 = > 200 mg/l (vapours); dermal: LD50 = ca. 6450 mg/kg; oral: LD50 = ca. 6500 mg/kg Repr. 1B; H360D: >= 3 - 100	

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

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After inhalation

Provide fresh air. Medical treatment necessary. In case of accident by inhalation: remove casualty to fresh air and keep at rest.

After contact with skin

Wash with plenty of water. Immediately remove any contaminated clothing, shoes or stockings. Medical treatment necessary. After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap.

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. After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

After ingestion

Observe risk of aspiration if vomiting occurs. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

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**

Co-ordinate fire-fighting measures to the fire surroundings. In case of fire: Use sand, extinguishing powder or alcohol-resistant foam to extinguish.

Unsuitable extinguishing media

Strong water jet

5.2. Special hazards arising from the substance or mixture

Non-flammable.

5.3. Advice for firefighters

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

Additional information

Suppress gases/vapours/mists with water spray jet. 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**

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

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

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

Other information

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.

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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**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Wear suitable protective clothing, gloves and eye/face protection.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

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. Take off contaminated clothing. Wash hands before breaks and after work. When using do not eat or drink.

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 exhaustion at critical locations.

Hints on joint storage

No special measures are necessary.

7.3. Specific end use(s)

brake fluids

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limit values**

CAS No	Name of agent	ppm	mg/m ³	fib/cm ³	Category	Origin
112-34-5	2-(2-Butoxyethoxy)ethanol	10	67.5		TWA (8 h)	
		15	101.2		STEL (15 min)	
111-77-3	2-(2-Methoxyethoxy)ethanol	10	50.1		TWA (8 h)	

8.2. Exposure controls**Appropriate engineering controls**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

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

Suitable eye protection: goggles.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four

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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.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	Liquid
Colour:	amber
Odour:	characteristic
Melting point/freezing point:	<-50 °C
Boiling point or initial boiling point and boiling range:	>260 °C
Flammability:	not determined
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:	very soluble
Solubility in other solvents	not determined
Partition coefficient n-octanol/water:	1,5
Vapour pressure:	1 hPa
Density:	1,02-1,07 g/cm ³
Relative vapour density:	not determined
Particle characteristics:	not applicable

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

The product is not: Explosive. not explosive according to EU A.14

Oxidizing properties

The product is not: oxidising.

Other safety characteristics

Evaporation rate:	not determined
Solid content:	not determined

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

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No known hazardous reactions.

10.4. Conditions to avoid

none

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No known hazardous decomposition products.

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.

ATEmix calculated

ATE (oral) 5005 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate				
	oral	LD50 >2000 mg/kg	Rat		
	dermal	LD50 >2000 mg/kg	Rat		
111-46-6	2,2'-oxybisethanol; diethylene glycol				
	oral	ATE 500 mg/kg			
	dermal	LD50 11890 mg/kg	Rabbit		
112-34-5	2-(2-butoxyethoxy)ethanol; diethylene glycol monobutyl ether				
	oral	LD50 5660 mg/kg	Rat		
	dermal	LD50 4120 mg/kg	Rabbit		
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether				
	oral	LD50 ca. 6500 mg/kg	Rat		
	dermal	LD50 ca. 6450 mg/kg	Rabbit		
	inhalation (1 h) vapour	LC50 > 200 mg/l	Rat		

Irritation and corrosivity

Serious eye damage/eye irritation: 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 fertility. 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.

11.2. Information on other hazards**Endocrine disrupting properties**

No information available.

Other information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

SECTION 12: Ecological information**12.1. Toxicity**

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

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
30989-05-0	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate					
	Acute fish toxicity	LC50 mg/l	>222,2	96 h	Oncorhynchus mykiss (Rainbow trout)	
	Acute crustacea toxicity	EC50 mg/l	>211,2	48 h	Pseudokirchneriella subcapitata	
111-46-6	2,2'-oxybisethanol; diethylene glycol					
	Acute fish toxicity	LC50 mg/l	> 32000	96 h	Gambusia affinis	
112-34-5	2-(2-butoxyethoxy)ethanol; diethylene glycol monobutyl ether					
	Acute algae toxicity	ErC50 mg/l	> 100		Scenedesmus sp.	
	Acute crustacea toxicity	EC50 mg/l	> 100	48 h	Daphnia magna	
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether					
	Acute fish toxicity	LC50 mg/l	7500	96 h	Lepomis macrochirus	
	Acute algae toxicity	ErC50 mg/l	> 500	72 h	Desmodesmus subspicatus	
	Acute crustacea toxicity	EC50 mg/l	> 500	48 h	Daphnia magna	

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
111-46-6	2,2'-oxybisethanol; diethylene glycol	-1,98 (25°C)
112-34-5	2-(2-butoxyethoxy)ethanol; diethylene glycol monobutyl ether	0,56 (25°C)
111-77-3	2-(2-methoxyethoxy)ethanol; diethylene glycol monomethyl ether	-0,68

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12.4. Mobility in soil

The product has not been tested.

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.

The product has not been tested.

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

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

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

List of Wastes Code - residues/unused products

160113 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; 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); brake fluids; hazardous waste

List of Wastes Code - used product

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

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.

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****EU regulatory information**

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Restrictions on use (REACH, annex XVII):

Entry 3, Entry 54, Entry 75

Directive 2010/75/EU on industrial emissions:

0,99 % (10,098 g/l)

Directive 2004/42/EC on VOC in paints and varnishes:

13,97 % (142,494 g/l)

Information according to Directive 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):

2 - obviously hazardous to water

15.2. Chemical safety assessment

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

SECTION 16: Other information

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Abbreviations and acronyms

Acute Tox: Acute toxicity
Eye Dam: Eye damage
Eye Irrit: Eye irritation
Repr: Reproductive toxicity
ADR: Accord européen sur le transport 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 Harmonized 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
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
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
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
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
RID: Regulations concerning the international carriage of dangerous goods by rail
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).

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.
H361d	Suspected of damaging the unborn child.
H361fd	Suspected of damaging fertility. 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 relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)