

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name: BRAKE FLUID DOT 5.1**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture**
Only for proper handling.
Brake fluid
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
MOTOREX AG
Bern-Zürich-Strasse 31, Postfach
CH-4901 Langenthal
Tel. +41 (0)62 919 75 75
www.motorex.com
- **Further information obtainable from: msds@motorex.com**
- **1.4 Emergency telephone number:**
In case of a medical emergency following exposure to a chemical, the public should call NHS Direct in England or Wales 0845 46 47 or NHS 24 in Scotland 08454 24 24 24 (UK only).

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
Repr. 2 H361d Suspected of damaging the unborn child.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**



GHS08

- **Signal word Warning**
- **Hazard-determining components of labelling:**
Tris[2-[2-(2-methoxyethoxy)ethoxy] ethyl] orthoborate
- **Hazard statements**
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.
 - P103 Read carefully and follow all instructions.
 - P201 Obtain special instructions before use.
 - 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 contents/container in accordance with local/regional/national/international regulations.

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- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 30989-05-0 EINECS: 250-418-4	Tris[2-[2-(2-methoxyethoxy)ethoxy] ethyl] orthoborate Repr. 2, H361d	≥50-≤70%
CAS: 110-97-4 EINECS: 203-820-9 Index number: 603-083-00-7	1,1'-iminodipropan-2-ol Eye Irrit. 2, H319	0.25-1%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Remove residues with soap and water.
Remove contaminated clothing immediately.
- **After eye contact:**
Rinse opened eye for several minutes under running water.
Consult a physician if irritation develops.
- **After swallowing:** Rinse mouth and immediately consult a physician
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture**
No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.

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See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Good general ventilation should be sufficient for most conditions.

Open and handle receptacle with care.

- Information about fire - and explosion protection: Keep respiratory protective device available.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Keep container tightly closed; product is hygroscopic.

Store in cool, dry well ventilated area away from sources of ignition and heat.

- Information about storage in one common storage facility: Not required.

Further information about storage conditions:

The recommended storage temperature is (deg.C): $\leq 50^{\circ}\text{C}$

Keep container tightly sealed.

Storage class: 10

- 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

DNELs

30989-05-0 Tris[2-[2-(2-methoxyethoxy)ethoxy] ethyl] orthoborate

Oral	DNEL/general population/Systemic effects/Long-term	4.1 mg/kg/24h (consumer)
Dermal	DNEL / Workers / Systemic effects / Long-term	8.3 mg/kg/24h (worker)
	DNEL/general population/Systemic effects/Long-term	4.1 mg/kg/24h (consumer)
Inhalative	DNEL / Workers / Systemic effects / Long-term	29.1 mg/m3 (worker)
	DNEL/general population/Systemic effects/Long-term	7.2 mg/m3 (consumer)

PNECs

30989-05-0 Tris[2-[2-(2-methoxyethoxy)ethoxy] ethyl] orthoborate

PNEC / Aquatic organisms / Freshwater	0.2112 mg/l (aquatic organisms)
PNEC / Aquatic organisms / Marine water	0.0211 mg/l (aquatic organisms)
PNEC/Aquatic org/intermittent releases(freshwater)	2.112 mg/l (aquatic organisms)
PNEC/Aquatic organisms/Sewage treatment plant/STP	100 mg/l (aquatic organisms)
PNEC / Aquatic organisms / Sediment (freshwater)	0.76 mg/kg (aquatic organisms)
PNEC / Aquatic organisms / Sediment (marine water)	0.076 mg/kg (aquatic organisms)

- Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

- Appropriate engineering controls No further data; see section 7.

Individual protection measures, such as personal protective equipment

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Do not inhale gases / fumes / aerosols.

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- **Respiratory protection:**
Not necessary if room is well-ventilated.
Respiratory protection if formation of aerosol or mist: use mask with filter type A2, A2/P2 or ABEK.
- **Hand protection**
Impervious gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves** Use CR or NBR rubber gloves. Material thickness: 0.5 mm
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye/face protection** Goggles recommended during refilling
- **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **General Information**
- **Physical state** Fluid
- **Colour:** Yellow
- **Odour:** Characteristic
- **Odour threshold:** Not determined.
- **Melting point/freezing point:** Undetermined.
- **Boiling point or initial boiling point and boiling range** >260 °C (DIN EN ISO 3405)
- **Flammability** Not applicable.
- **Lower and upper explosion limit**
- **Lower:** Not determined.
- **Upper:** Not determined.
- **Flash point:** >126 °C
- **Decomposition temperature:** Not determined.
- **pH at 20 °C** 7-8 (DIN 51369)
- **Viscosity:**
- **Kinematic viscosity** 7 mm²/s @ 40 °C (DIN 51562-1)
- **Consistency**
- **Dynamic:** Not determined.
- **Solubility**
- **water:** Fully miscible.
- **Partition coefficient n-octanol/water (log value)** Not determined.
- **Heat Capacity**
- **Vapour pressure:** Not determined.
- **Density and/or relative density**
- **Density at 20 °C:** 1.06 g/cm³ (ASTM D 4052)
- **Relative density** Not determined.
- **Vapour density** Not determined.

- **9.2 Other information**
- **Appearance:**
- **Form:** Fluid
- **Important information on protection of health and environment, and on safety.**
- **Explosive properties:** Product does not present an explosion hazard.

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- **Solvent separation test:**
- **VOC (EC)** 0.00 %
- **Change in condition**
- **Evaporation rate** Not determined.

- **Information with regard to physical hazard classes**
- **Explosives** Void
- **Flammable gases** Void
- **Aerosols** Void
- **Oxidising gases** Void
- **Gases under pressure** Void
- **Flammable liquids** Void
- **Flammable solids** Void
- **Self-reactive substances and mixtures** Void
- **Pyrophoric liquids** Void
- **Pyrophoric solids** Void
- **Self-heating substances and mixtures** Void
- **Substances and mixtures, which emit flammable gases in contact with water** Void
- **Oxidising liquids** Void
- **Oxidising solids** Void
- **Organic peroxides** Void
- **Corrosive to metals** Void
- **Desensitised explosives** Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.
- **Additional information:** The product is stable but hygroscopic.

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.

- **LD/LC50 values relevant for classification:**

30989-05-0 Tris[2-[2-(2-methoxyethoxy)ethoxy] ethyl] orthoborate

Oral	LD50	2,000 mg/kg (rat)
	NOAEL	1,000 mg/kg/24h (rat)
Dermal	LD50	2,000 mg/kg (rat)

- **Reproductive toxicity** Suspected of damaging the unborn child.
- **Additional toxicological information:**
The sweet taste can seduce children to drink large quantities; hence keep out of reach of children.

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· 11.2 Information on other hazards

· Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

30989-05-0 Tris[2-[2-(2-methoxyethoxy)ethoxy] ethyl] orthoborate

LC50	222-1,010 mg/l/96h (fish)
LC50	222-1,010 mg/l/48h (fish)
LC50	222-1,010 mg/l/72h (aquatic organisms)
LC50	222-1,010 ppm/96h (fish)
EC10	224.4 mg/l (Alga)
EC10	500 mg/l/48h (aquatic invertebrates)
EC50	211-960 mg/l/24h (aquatic invertebrates)
EC50	224-1,020 mg/l/72h (algae / cyanobacteria)
EC0	500 mg/l/48h (aquatic invertebrates)
EC50	211-960 mg/l/48h (aquatic invertebrates)
EC50	224.4 mg/l (Alga)
NOEC	224-1,020 mg/l/72h (algae / cyanobacteria)

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential** No further relevant information available.

· **12.4 Mobility in soil** No further relevant information available.

· 12.5 Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· 12.6 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

· 12.7 Other adverse effects

· Additional ecological information:

· General notes:

Water hazard class 1 (according to Appendix 1 AwSV): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact waste processors for recycling information.

Return product and/or partially emptied container in original packaging to the point of sale or hand it over to a collection point for special waste.

· Uncleaned packaging:

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

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SECTION 14: Transport information

· 14.1 UN number or ID number · ADR/RID/ADN, ADN, IMDG, IATA	Void
· 14.2 UN proper shipping name · ADR/RID/ADN, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es) · ADR/RID/ADN, ADN, IMDG, IATA · Class	Void
· 14.4 Packing group · ADR/RID/ADN, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· UN "Model Regulation":	Void

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
 - Directive 2012/18/EU
 - Named dangerous substances - ANNEX I None of the ingredients is listed.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. The classification of the mixture was carried out by calculation in accordance with the rules laid down in Annex I of Regulation (EC) No 1272/2008.

No special training instructions to ensure protection of human health and environment are required.

- **purity requirement**
- **Relevant phrases**
 - H319 Causes serious eye irritation.
 - H361d Suspected of damaging the unborn child.
- **Department issuing SDS:** Abteilung Produktsicherheit
- **Abbreviations and acronyms:**
 - ADR: Accord relatif au transport international 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 Harmonised 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 (division of the American Chemical Society)
 - VOC: Volatile Organic Compounds (USA, EU)
 - DNEL: Derived No-Effect Level (UK REACH)
 - PNEC: Predicted No-Effect Concentration (UK REACH)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic

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vPvB: very Persistent and very Bioaccumulative
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 Repr. 2: Reproductive toxicity – Category 2

· * **Data compared to the previous version altered.**

Annex: Exposure scenario 1

- **Short title of the exposure scenario** Industrial use of brake fluids
- **Sector of Use**
 SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
- **Product category** PC17 Hydraulic fluids
- **Process category**
 PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
 PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
 PROC20 Use of functional fluids in small devices
- **Environmental release category**
 ERC7 Use of functional fluid at industrial site
 ERC9a Widespread use of functional fluid (indoor)
 ERC9b Widespread use of functional fluid (outdoor)
- **Description of the activities / processes covered in the Exposure Scenario**
 See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency** 5 workdays/week.
- **Physical parameters**
- **Physical state** Fluid
- **Concentration of the substance in the mixture** The substance is main component.
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure** No special measures required.
- **Other operational conditions affecting consumer exposure** Not required.
- **Other operational conditions affecting consumer exposure during the use of the product**
 Not applicable.
- **Risk management measures**
- **Worker protection**
- **Organisational protective measures** No special measures required.
- **Technical protective measures** No special measures required.
- **Personal protective measures** No special measures required.
- **Measures for consumer protection** No special measures required.
- **Environmental protection measures**
- **Air** No special measures required.
- **Water** No special measures required.
- **Disposal measures** Ensure that waste is collected and contained.
- **Disposal procedures** Dispose of product residues with household waste.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.
- **Guidance for downstream users** No further relevant information available.

Annex: Exposure scenario 2

- **Short title of the exposure scenario** Professional use of brake fluids
- **Sector of Use**
 SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

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- **Product category** PC17 Hydraulic fluids
- **Process category**
 - PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
 - PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
 - PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 - PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
 - PROC20 Use of functional fluids in small devices
- **Environmental release category**
 - ERC9a Widespread use of functional fluid (indoor)
 - ERC9b Widespread use of functional fluid (outdoor)
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
 - **Duration and frequency** 5 workdays/week.
- **Physical parameters**
- **Physical state** Fluid
- **Concentration of the substance in the mixture** The substance is main component.
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure** No special measures required.
- **Other operational conditions affecting consumer exposure** Not required.
- **Other operational conditions affecting consumer exposure during the use of the product**
Not applicable.
- **Risk management measures**
- **Worker protection**
- **Organisational protective measures** No special measures required.
- **Technical protective measures** No special measures required.
- **Personal protective measures** No special measures required.
- **Measures for consumer protection** No special measures required.
- **Environmental protection measures**
- **Air** No special measures required.
- **Water** No special measures required.
- **Disposal measures** Ensure that waste is collected and contained.
- **Disposal procedures** Dispose of product residues with household waste.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.
- **Guidance for downstream users** No further relevant information available.

Annex: Exposure scenario 3

- **Short title of the exposure scenario** Private use of brake fluids
- **Sector of Use** SU21 Consumer uses: Private households / general public / consumers
- **Product category** PC17 Hydraulic fluids
- **Process category**
 - PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
 - PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
 - PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 - PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
 - PROC20 Use of functional fluids in small devices
- **Environmental release category**
 - ERC9a Widespread use of functional fluid (indoor)
 - ERC9b Widespread use of functional fluid (outdoor)

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- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency** 5 workdays/week.
- **Physical parameters**
- **Physical state** Fluid
- **Concentration of the substance in the mixture** The substance is main component.
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure** No special measures required.
- **Other operational conditions affecting consumer exposure** Not required.
- **Other operational conditions affecting consumer exposure during the use of the product**
Not applicable.
- **Risk management measures**
- **Worker protection**
- **Organisational protective measures** No special measures required.
- **Technical protective measures** No special measures required.
- **Personal protective measures** No special measures required.
- **Measures for consumer protection** No special measures required.
- **Environmental protection measures**
- **Air** No special measures required.
- **Water** No special measures required.
- **Disposal measures** Ensure that waste is collected and contained.
- **Disposal procedures** Dispose of product residues with household waste.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.
- **Guidance for downstream users** No further relevant information available.

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