

BRAKE FLUID DOT 4

Automotive Brake Fluid

BRAKE FLUID DOT 4 is a high-performance poly glycol based brake fluid specially designed for use in disc, drum & Anti-locking Brake Systems (ABS) of any commercial vehicles, passenger cars and motorcycles operating under moderate to severe conditions and requiring a DOT 4 type of fluid.

BRAKE FLUID DOT 4 should never be used in place of or mixed with silicone based brake fluids (DOT 5) nor should be used where DOT 5.1 fluids are prescribed.

BRAKE FLUID DOT 4 is based on polyethylene glycol base fluid in combination with an unique additive package to ensure the following properties:

- Superior oxidative stability resists oxidation at high temperatures encountered in disk braking systems
- Superior high temperature stability and low temperature fluidity ensure trouble free operation
- Effective corrosion inhibitors provide long term corrosion protection to the metallic components of the brake systems
- Provides lubricity and system protection
- Compatible with all seals and metals used in conventional braking systems requiring polyethylene glycol brake fluids

BRAKE FLUID DOT 4 meets the following performance criteria:

FMVSS 116 DOT 4

SAE J 1703

ISO 4925

Typical Analysis

Properties	Unit	Method	Typical Value
Colour		Visual	Colourless to Amber
Density @20°C	kg/m ³	ASTM D4052	1043
Kin. Viscosity @-40°C	mm ² /s	FMVSS 116	1250
Kin. Viscosity @100°C	mm ² /s	FMVSS 116	2.3
Equilibrium Reflex Boiling Point (ERBP)	°C	FMVSS 116	265
Wet Equilibrium Reflex Boiling Point (WBP)	°C	FMVSS 116	161
pH Value			10
Flash Point COC	°C	DIN 51354-2	125
Date Issued: 10-6-2021	Supersedes: 17-10-2016	Revision Nr.: 01	



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

Product form : Mixture
Product name : 73920 - BRAKE FLUID DOT 4
UFI : ECQK-D61P-V00H-WNRG
Product code : 73920

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Intended for general public
Main use category : Consumer use

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

North Sea Lubricants B.V. B.V.
Ampèrestraat 5
NL- 3846AN Harderwijk
The Netherlands
T +31 651345369
support@northsealubricants.com - www.northsealubricants.com

1.4. Emergency telephone number

Emergency number : +31 (0)786527652
Monday to Friday: 09:00 - 16:00 (CET)

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

Reproductive toxicity, Category 2 H361
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Suspected of damaging fertility or the unborn child.

2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP) :



GHS08

Signal word (CLP) : Warning
Contains : Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate
Hazard statements (CLP) : H361 - Suspected of damaging the unborn child..
Precautionary statements (CLP) : P102 - Keep out of reach of children.
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.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P405 - Store locked up.

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2.3. Other hazards

Other hazards which do not result in classification : Attacks some forms of plastics, rubber, and coatings.

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	CAS-No.: 30989-05-0 EC-No.: 250-418-4 REACH-no: 2119462824-33-XXXX	≥ 25	Repr. 2, H361d
Butyl Triglycol	CAS-No.: 143-22-6 EC-No.: 205-592-6 EC Index-No.: 603-183-00-0 REACH-no: 2119475107-38-XXXX	1 – 10	Eye Dam. 1, H318
Butyl Polyglycol	CAS-No.: 9004-77-7 EC-No.: 500-012-0 REACH-no: 2119475115-41-XXXX	< 10	Eye Irrit. 2, H319
2-(2-methoxyethoxy)ethanol substance with national workplace exposure limit(s) (BE, DK, ES, FR, GB, NL, PL); substance with a Community workplace exposure limit	CAS-No.: 111-77-3 EC-No.: 203-906-6 EC Index-No.: 603-107-00-6 REACH-no: 01-2119475100-52	< 5	Repr. 2, H361d

Specific concentration limits:

Name	Product identifier	Specific concentration limits
Butyl Triglycol	CAS-No.: 143-22-6 EC-No.: 205-592-6 EC Index-No.: 603-183-00-0 REACH-no: 2119475107-38-XXXX	(20 ≤C < 30) Eye Irrit. 2, H319 (30 ≤C < 100) Eye Dam. 1, H318
Butyl Polyglycol	CAS-No.: 9004-77-7 EC-No.: 500-012-0 REACH-no: 2119475115-41-XXXX	(20 ≤C < 100) Eye Irrit. 2, H319

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

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SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: IF exposed or concerned: Get medical advice/attention. Never give anything by mouth to an unconscious person.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.
First-aid measures after eye contact	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion	: If swallowed, seek medical advice immediately and show this container or label. Drink plenty of water. Do not induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

No additional 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 spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a water jet since it may cause the fire to spread.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire	: Toxic fumes may be released.
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5.3. Advice for firefighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Avoid contact with spilled material. Avoid inhalation of vapours. Evacuate unnecessary personnel.
Emergency procedures	: Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.
- Maximum storage period : 5 year
- Storage temperature : ≤ 40 °C

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

2-(2-methoxyethoxy)ethanol (111-77-3)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	2-(2-Methoxyethoxy)ethanol
IOEL TWA	50.1 mg/m ³
Remark	Skin
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



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8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

8.2.2.3. Respiratory protection

Respiratory protection:

No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: amber.
Odour	: Not available
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: > 260 °C SAE J 1703
Flammability	: Not applicable
Explosive limits	: 0.6 – 7 vol %
Lower explosive limit (LEL)	: Not available
Upper explosive limit (UEL)	: Not available
Flash point	: > 120 °C IP 35
Auto-ignition temperature	: > 280 °C
Decomposition temperature	: > 300 °C
pH	: 7 – 10.5
Viscosity, kinematic	: 5 – 10 mm ² /s @20°C
Solubility	: Soluble in water. Soluble in ethanol. Water: 100 % Ethanol: 100 %
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water (Log Pow)	: < 2
Vapour pressure	: 1 mbar @20°C
Vapour pressure at 50 °C	: Not available
Density	: 1.02 – 1.07 kg/l DIN 51757
Relative density	: Not available
Relative vapour density at 20 °C	: Not available
Particle size	: Not applicable
Particle size distribution	: Not applicable
Particle shape	: Not applicable
Particle aspect ratio	: Not applicable
Particle aggregation state	: Not applicable
Particle agglomeration state	: Not applicable
Particle specific surface area	: Not applicable

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Particle dustiness : Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

Relative evaporation rate (butylacetate=1) : < 0.1

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents. Strong reducing agents.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

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LD50 oral (rat)	≥ 5000 mg/kg
LD50 dermal (rat)	≥ 3000 mg/kg
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate (30989-05-0)	
LD50 oral (rat)	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal (rat)	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal))
Butyl Triglycol (143-22-6)	
LD50 oral (rat)	> 5000 mg/kg bodyweight Animal: rat, Guideline: EU Method B.1 bis (Acute Oral Toxicity - Fixed Dose Procedure)
LD50 dermal (rabbit)	3540 mg/kg bodyweight Animal: rabbit, Animal sex: male, 95% CL: 1050 - 11800

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Butyl Polyglycol (9004-77-7)	
LD50 oral (rat)	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal (rabbit)	3540 mg/kg bodyweight Animal: rabbit, Animal sex: male, 95% CL: 1050 - 11800
Skin corrosion/irritation	: Not classified pH: 7 – 10.5
Serious eye damage/irritation	: Not classified pH: 7 – 10.5
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Suspected of damaging the unborn child..
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified

Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate (30989-05-0)	
NOAEL (oral, rat, 90 days)	≥ 1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Butyl Triglycol (143-22-6)	
LOAEL (oral, rat, 90 days)	1200 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (oral, rat, 90 days)	400 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	4000 mg/kg bodyweight Animal: rat, Guideline: other:EPA TSCA Consent Order

Butyl Polyglycol (9004-77-7)	
LOAEL (oral, rat, 90 days)	1200 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (oral, rat, 90 days)	400 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Aspiration hazard : Not classified

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Viscosity, kinematic	5 – 10 mm ² /s @20°C

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

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LC50 - Fish [1]	≥ 100 mg/l Oncorhynchus Mykiss

Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate (30989-05-0)	
LC50 - Fish [1]	> 222.2 mg/l Test organisms (species): Oncorhynchus mykiss

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Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate (30989-05-0)	
LC50 - Fish [2]	> 1010 mg/l Test organisms (species): Oncorhynchus mykiss
EC50 - Crustacea [1]	> 211.2 mg/l Test organisms (species): Daphnia magna
EC50 - Crustacea [2]	> 960 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 224.4 mg/l Test organisms (species): other:Pseudokirchneriella subcapitata
EC50 72h - Algae [2]	> 1020 mg/l Test organisms (species): other:Pseudokirchneriella subcapitata
Butyl Triglycol (143-22-6)	
LC50 - Fish [1]	2400 mg/l Test organisms (species): Pimephales promelas
LC50 - Fish [2]	2200 – 4600 mg/l Test organisms (species): Leuciscus idus
EC50 72h - Algae [1]	1589 mg/l Test organisms (species): Pseudokirchneriella subcapitata
EC50 72h - Algae [2]	3211 mg/l Test organisms (species): Pseudokirchneriella subcapitata
Butyl Polyglycol (9004-77-7)	
LC50 - Fish [1]	> 1800 mg/l Test organisms (species): other:Turbot (Scophthalmus maximus)
EC50 - Crustacea [1]	> 3200 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	391 mg/l Test organisms (species): Skeletonema costatum

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

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Partition coefficient n-octanol/water (Log Pow)	< 2

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
European List of Waste (LoW) code : 16 01 13* - brake fluids

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

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ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available				

14.6. Special precautions for user

Overland transport

No data available

Transport by sea

No data available

Air transport

No data available

Inland waterway transport

No data available

Rail transport

No data 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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

15.1.2. National regulations

No additional information available

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15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Issue date	Modified	
	Supersedes	Removed	
2.2	Precautionary statements (CLP)	Modified	
3	Composition/information on ingredients	Modified	

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BLV	Biological limit value
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
EC-No.	European Community number
EN	European Standard
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative
WGK	Water Hazard Class

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Full text of H- and EUH-statements:	
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H361	Suspected of damaging fertility or the unborn child.
H361d	Suspected of damaging the unborn child.
Repr. 2	Reproductive toxicity, Category 2

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.