



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

1.1 Product Identifier:

Trade Name: Brake Fluid DOT 4 & DOT 5.1: Grades with Boiling Points >260°C and Wet Boiling Points > 165 °C

Product no.

8DF 355 360-052 (355.360-052), sales quantity: 10 x 1000 ml

8DF 355 360-062 (355.360-062), sales quantity: 4 x 5000 ml

8DF 355 360-082 (355.360-082), sales quantity: 24 x 500 ml

8DF 355 360-092 (355.360-092), sales quantity: 10 x 1000 ml

8DF 355 360-051 (355.360-051), sales quantity: 10 x 1000 ml, UFI Code: 7055-210C-V10Q-C4XA

8DF 355 360-061 (355.360-061), sales quantity: 4 x 5000 ml, UFI Code: 8U55-31WA-X10N-YJRY

8DF 355 360-081 (355.360-081), sales quantity: 24 x 500 ml, UFI Code: 2K75-71Q9-210J-6DE8

8DF 355 360-091 (355.360-091), sales quantity: 10 x 1000 ml, UFI Code: UE85-91M8-410G-TT7W

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

Relevant identified uses of the substance or mixture: Hydraulic fluid

Relevant identified uses of the substance or mixture (REACH): No special

Uses advised against: No special

1.3 Details of the supplier of the MSDS:

HELLA PAGID GmbH

Lüschershofstr. 80, 45356 Essen / Germany

www.hella-pagid.com

Phone: +49 (0) 201 2176000

E-mail: service@hella-pagid.com

1.4 Emergency Telephone Number:

Informationszentrale gegen Vergiftungen,

Universitätsklinikum Bonn

Adenauerallee 119, D-53113 Bonn

Tel: +49 (0)228-19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Repr. 2; H361d, Suspected of damaging the unborn child.

Classification may be based on test results obtained on the final product rather than calculation

2.2 Label elements

Hazard Pictogram/s:



Signal word: "Warning"

Hazard statement(s):

Suspected of damaging the unborn child.

Safety statement(s)

General

P101, If medical advice is needed, have product container or label at hand.

P102, Keep out of reach of children.

Prevention

P280, Wear protective gloves/protective clothing/eye protection/face protection.

P202, Do not handle until all safety precautions have been read and understood.

Response

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.

Storage

-

Disposal

P501, Dispose of contents/container to an approved waste disposal plant.

Hazardous substances

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

2.3 Other Hazards:

Additional labelling

Not applicable

Additional warnings

This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB.

Product is not classified as combustible but will burn.

SECTION 3: Composition/information on ingredients

3.1 Substances:

Not applicable.

3.2 Mixtures:

Product / Ingredient name	Identifiers	% w/w	Classification	Note
Tris[2-[2-(2-methoxyethoxy)ethyl] orthoborate	CAS No.: 30989-05-0 EC No.: 250-418-4 REACH No.: 01-2119462824-33-XXXX Index No.:	30 - 90 %	Repr. 2, H361d	
Butyl triglycol	CAS No.: 143-22-6 EC No.: 205-592-6 REACH No.: 01-2119475107-38-XXXX Index No.: 603-183-00-0	1 - 9,9 %	Eye Dam. 1, H318 (SCL: 30.00 %)	
Butyl Polyglycol	CAS No.: 9004-77-7 EC No.: 500-012-0 REACH No.: 01-2119475115-41-XXXX Index No.:	0 - 5 %	Eye Irrit. 2, H319 (SCL: 20.00 %)	
2-(2-methoxyethoxy)ethanol	CAS No.: 111-77-3 EC No.: 203-906-6 REACH No.: 01-2119475100-52-XXXX Index No.: 603-107-00-6	0 - 2,99 %	Repr. 2, H361d	Annex XVII, EU

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

EU: European occupational exposure limit

Annex XVII: The chemical substance is subject to REACH restrictions, REACH annex XVII.

SECTION 4: First aid measures

4.1 Description of first aid measures:

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her. If recovery is not rapid, seek medical attention

Skin contact

Immediately remove contaminated clothing and shoes. Ensure that skin, which has been exposed to the material, is washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

Remove contact lenses. Flush eyes immediately with plenty of water or isotonic water (20-30°C) for at least 5 minutes and continue until irritation stops. Make sure to flush under upper and lower eyelids. If irritation continues, contact a doctor. Continue flushing during transport.

Ingestion

Provide plenty of water for the person to drink and stay with him/her. Seek medical advice immediately and bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the victim lean forward with head down to avoid inhalation of- or choking on vomited material. If medical attention is delayed, give adults 90-120 ml hard liquor such as 40% v/v spirits. Give children proportionately less at a rate of 2ml/kg body weight.

Burns

Not applicable

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

The most important symptoms are described in sections 2 and 11.
No special.

4.3. Indication of any immediate medical attention and special treatment needed

IF exposed or concerned: Get immediate medical advice/attention.

Information to medics

Bring this safety data sheet or the label from this product.
Treat symptomatically. There is no specific antidote.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Recommended: alcohol-resistant foam, carbonic acid, powder, water mist. Waterjets should not be used, since they can spread the fire. However they may be used to cool adjacent containers.

5.2. Special hazards arising from the substance or mixture

Fire will result in dense black smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are: Carbon oxides (CO / CO₂).

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact The National Poisons Information Service (dial 111, 24 h service) in order to obtain further advice.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid direct contact with spilled substances.

Avoid inhalation of vapours from spilled material.

Prevent unnecessary personnel entering area of spillage. When cleaning up large spills appropriate protective clothing should be worn -see section 8.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of leakage to the surroundings, contact local environmental authorities.

6.3. Methods and material for containment and cleaning up

Limit spillage and collect using granular absorbent or similar materials, and dispose of it in accordance with the regulations on dangerous waste.

Use sand, sawdust, earth, vermiculite, diatomaceous earth to contain and collect non-combustible absorbent materials and place in container for disposal, according to local regulations.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section on "Disposal considerations" in regard of handling of waste.

See section on 'Exposure controls/personal protection' for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid any method of handling that generates mists or aerosols.

Do not eat, drink or smoke when handling this product.

See section on 'Exposure controls/personal protection' for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Always store in containers of the same material as the original container.

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Storage temperature

Room temperature 15 to 30°C

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2

Users are referred to the specification SAE J1707 "Service maintenance of brake fluids".

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters:

2-(2-methoxyethoxy)ethanol;

Long term exposure limit (8 hours): 10 ppm

Long term exposure limit (8 hours): 50,1 mg/m³

Annotations:

Sk = Can be absorbed through the skin and lead to systemic toxicity.

The Control of Substances Hazardous to Health Regulations 2002. SI 2002/2677 The Stationery Office 2002. EH40/2005 Workplace exposure limits (Fourth Edition 2020)

DNEL

Product / Ingredient name	DNEL	Route of exposure	Duration
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	8.3 mg/kgBW/day	Dermal	Long term – Systemic effects - Workers
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	29.1 mg/m ³	Inhalation	Long term – Systemic effects - Workers
Butyl Triglycol	50mg/kgBW/day	Dermal	Long term – Systemic effects - Workers
Butyl Triglycol	195mg/m ³	Inhalation	Long term – Systemic effects - Workers
2-(2-methoxyethoxy)ethanol	0.53mg/kg BW/day	Dermal	Long term – Systemic effects - Workers
2-(2-methoxyethoxy)ethanol	50.1mg/m ³	Inhalation	Long term – Systemic effects - Workers

PNEC

Product / Ingredient name	PNEC	Route of exposure	Duration
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	2.112 mg/l	Water	Single
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	100 mg/l	Sewage Treatment Plant	Continuous
Butyl Triglycol	5mg/L	Water	Single
Butyl Triglycol	200mg/L	Sewage Treatment Plant	Continuous
2-(2-methoxyethoxy)ethanol	12mg/L	Water	Single
2-(2-methoxyethoxy)ethanol	10000mg/L	Sewage Treatment Plant	No data available

8.2 Exposure Controls:

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

General recommendations

Do not eat, drink or smoke in the workplace

Exposure scenarios

There are no exposure scenarios implemented for this product.

Exposure limits

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

Appropriate technical measures

Airborne vapour and mist concentrations must be kept at a minimum and below current limit values (see above). Installation of a Local exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure emergency eyewash and -showers are clearly marked.

Hygiene measures

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Always wash hands, forearms and face.

Measures to avoid environmental exposure

Keep spill absorbent materials available in the workplace. If possible, clean up any spills immediately.

Individual protection measures, such as personal protective equipment

Generally

Use only CE marked protective equipment.



Respiratory Equipment

No specific requirements


Skin protection

No specific requirements

Hand protection

Work situation	Material	Glove thickness	Breakthrough time	Standards	
	Butyl	0.3	> 480	EN374-2, EN374-3, EN388	
	Nitrile	0.2	> 480	EN374-2, EN374-3, EN388	

Eye protection

Work situation	Recommended	Standards	
	Wear safety glasses with side shields.	EN166	

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Form

Liquid

Colour

Amber

Odour

Mild

Odour threshold (ppm)

Testing not relevant or not possible due to nature of the product.

pH

7-10.5

Density (g/cm³)

1.02-1.07

Viscosity

5-10 centistokes (20.00 °C)

Phase changes

Melting point (°C)

< -50

Boiling point (°C)

>260 °C

Vapour pressure

1.0 millibar

Vapour density

Testing not relevant or not possible due to nature of the product.

Decomposition temperature (°C)

300

Evaporation rate (n-butylacetate = 100)

0.01

Data on fire and explosion hazards

Flash point (°C)

>120 °C

Ignition (°C)

>280 °C

Auto flammability (°C)

Testing not relevant or not possible due to nature of the product.

Explosion limits (% v/v)

Testing not relevant or not possible due to nature of the product.

Explosive properties

Testing not relevant or not possible due to nature of the product.

Oxidizing properties

Testing not relevant or not possible due to nature of the product.

Solubility

Solubility in water

Soluble

n-octanol/water coefficient

1.50

Solubility in fat (g/L)

Testing not relevant or not possible due to nature of the product.

9.2 Other information:

No other relevant data.

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

The product is stable under the conditions, noted in the section "Handling and storage".

10.3. Possibility of hazardous reactions

No special

10.4. Conditions to avoid

No special

10.5. Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

Acute toxicity

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

Oral -Based on read across data toxicity is low (LD 50 Rat >5000 mg/kg). Sparse experience indicates toxicity in man could be greater.

Inhalation - Not applicable due to low vapour pressure of product.

Dermal - Based on read across data toxicity is low (LD 50 Rabbit >3000 mg/kg).

General - Although acute toxicity of this product is low, if significant amounts are absorbed there is a risk of renal damage which could lead to kidney failure or even death. Other symptoms of overexposure include Central Nervous System effects, abdominal discomfort, metabolic acidosis and headache or nausea.

Skin corrosion/irritation

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

However, repeated contact may de-fat the skin and cause dermatitis.

Serious eye damage/irritation

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

Respiratory or skin sensitisation

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

Germ cell mutagenicity

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

Carcinogenicity

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

Reproductive toxicity

Suspected of damaging the unborn child.

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.

Long term effects

Reproductive toxicity: This product contains teratogenic substances, which may produce anomalies and/or developmental defects to the human offspring. Adverse effects include: death, growth retardation, congenital disorders, delayed mental development, and functional disorders.

Other information

No special

SECTION 12: Ecological information

12.1. Toxicity

Product is of low ecotoxicity

Fish 96h LC50 >100mg/l (Oncorhynchus Mykiss)

Daphnia 48h EC50 Not determined but expected to be virtually non-toxic

Algae 72h EC50 Not determined but expected to be virtually non-toxic

12.2. Persistence and degradability

Product is inherently biodegradable and is expected to be readily biodegradable based on ingredients (OECD 302B).

If admitted into adapted biological water treatment plants no adverse effects of the degrading action of the live sludge are expected

12.3. Bioaccumulative potential

Not expected to Bio-accumulate. Log POW for all main ingredients <2.0

12.4. Mobility in soil

Product is soluble in water and will be mobile in soil until degraded. Volatilisation from water to air not expected.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB.

12.6. Other adverse effects

No special

SECTION 13: Disposal considerations

13.1 Waste treatment methods:

Product is covered by the regulations on hazardous waste.

Dispose of in accord with local and national regulations. Recycling or controlled incineration with energy recovery are recommended.

EWC code

16 01 13* Brake fluids

Specific labelling

Not applicable

Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: Transport information

14.1 - 14.4

Not dangerous goods according to ADR, IATA and IMDG.

ADR/RID

Not applicable

IMDG

Not applicable

IATA

Not applicable

"MARINE POLLUTANT"

No

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific to the substance or mixture:

Restrictions for application

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

Demands for specific education

No specific requirements

SEVESO - Categories / dangerous substances

Not applicable

Additional information

Tactile warning.

Sources

Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work.

Council Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (CLP).

Regulation (EC) 1907/2006 (REACH).

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H361d, Suspected of damaging the unborn child.

H318, Causes serious eye damage.

H319, Causes serious eye irritation.

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

CAS = Chemical Abstracts Service

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

CSA = Chemical Safety Assessment

CSR = Chemical Safety Report

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

EINECS = European Inventory of Existing Commercial chemical Substances

ES = Exposure Scenario

EUH statement = CLP-specific Hazard statement

EWC = European Waste Catalogue

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IARC = International Agency for Research on Cancer (IARC)

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol

of 1978. ("Marpol" = marine pollution)

OECD = Organisation for Economic Co-operation and Development

PBT = Persistent, Bioaccumulative and Toxic

PNEC = Predicted No Effect Concentration

RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail

RRN = REACH Registration Number

SVHC = Substances of Very High Concern

STOT-RE = Specific Target Organ Toxicity - Repeated Exposure

STOT-SE = Specific Target Organ Toxicity - Single Exposure

TWA = Time weighted average

UN = United Nations

UVCB = Complex hydrocarbon substance

VOC = Volatile Organic Compound

vPvB = Very Persistent and Very Bioaccumulative

Additional information

In accordance with Regulation (EC) No. 1272/2008 (CLP) the evaluation of the classification of the mixture is based on:

The classification of the mixture in regard of health hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP)

The classification of the mixture is based on test data.

This data sheet is available in other European Languages.

Data sheets for other areas of the Globe may be available on request.

The information contained herein is based on the present knowledge and experience of Hella Pagid GmbH. It in no way constitutes the users own assessment of work place risk as required by other Health and Safety legislation.

Hella Pagid GmbH does not, by supplying this information, guarantee or warrant any specific properties or qualities of goods supplied. It is the responsibility of the purchaser to determine whether the goods ordered are fit for any purpose for which they may be required.

Other

Because of the major changes, this data sheet should be read as entirely new.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.