BRAKE FLUID DOT 4

SAFETY DATA SHEET

Compiled in accordance with REACH Regulation (EC) No 1907/2006, as retained and amended in UK law

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VERSION: 5.0

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

1.1. Product identifier

Product form	:	Mixture
Trade name	:	Brake Fluid Dot 4
Product code	:	Ford Internal Ref.: 171626
SDS Number	:	4395
UFI	:	QV9A-AGAM-900N-EQVT
Product use	:	Professional use

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

1.2.1. Relevant identified uses

Function or use category	:	Brake fluids

1.2.2. Uses advised against

Restrictions on use	:	None known

1.3. Details of the supplier of the safety data sheet

Supplier
Ford-Werke GmbH
Edsel-Ford-Str. 2-14
50769 Cologne
Germany
+49 221 90-33333
sdseu@ford.com

Distributor
Ford Motor Company Ltd.
Parts Distribution Centre
Royal Oak Way South
NN11 8NT Daventry, Northants
United Kingdom
+44 1327 305 198

1.4. Emergency telephone number

+49 (0) 6132-84463 (GBK GmbH – 24/7)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations

Health hazards	Reproductive toxicity, Category 2	H361d	Suspected of damaging the unborn child.

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

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations

Hazard pictograms

Signal word	Warning
Contains	Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate

Hazard statements

H361d — Suspected of damaging the unborn child.

Precautionary statements

Prevention

P201 — Obtain special instructions before use.

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

P280 — Wear eye protection, protective clothing, face protection, protective gloves

Response

P308+P313 — IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII.
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII.

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 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS- No EC- No Index No RRN	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Notes
Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate	30989-05-0 250-418-4 01-2119462824-33-XXXX	30 -< 50	Repr. 2, H361d	
Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol	- 907-996-4 01-2119531322-53-XXXX, 01-2119475115-41-XXXX	3 -< 10	Eye Dam. 1, H318	(20 ≤C < 30) Eye Irrit. 2, H319 (30 ≤C < 100) Eye Dam. 1, H318
2,2' -oxybisethanol	111-46-6 203-872-2 603-140-00-6 01-2119457857-21-XXXX	1 -< 10	Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight)	
1,1'-iminodipropan-2-ol	110-97-4 203-820-9 603-083-00-7 01-2119475444-34-XXXX	1 - < 10	Eye Irrit. 2, H319	

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Take off immediately all contaminated clothing. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.

First-aid measures after skin contact : Gently wash with plenty of soap and water. When in doubt or if symptoms are observed, get medical advice.

First-aid measures after eye contact : Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Remove contact lenses, if present and easy to do. Continue rinsing. Consult an ophtalmologist if irritation persists.

First-aid measures after ingestion : Rinse mouth out with water. Never give anything by mouth to an unconscious person. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after ingestion : Suspected of damaging the unborn child.

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 : Alcohol resistant foam. carbon dioxide (CO2). dry chemical powder. Water spray.

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 : During fire, gases hazardous to health may be formed. Nitrous oxide. Carbon oxides (CO, CO2).

5.3. Advice for firefighters

Precautionary measures fire : In case of fire and/or explosion do not breathe fumes.

Firefighting instructions : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Fight fire from safe distance and protected location.

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Ventilate spillage area. Keep unnecessary personnel away.

6.1.1. For non-emergency personnel

Protective equipment : May be dangerously slippery if spilled. Wear appropriate protective equipment and clothing during clean-up.

Emergency procedures : Ventilate spillage area. Do not touch or walk on the spilled product. Keep people away from and upwind of spill/leak. Avoid contact with skin and eyes.

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". Prevent further leakage or spillage if safe to do so. Use personal protective equipment as required.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

For containment : Dispose of in accordance with local regulations.

Methods for cleaning up : Small spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Never return spills in original containers for re-use.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For disposal of residues refer to section 13 :" Disposal considerations".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Do not handle, store or open near an open flame, sources of heat or sources of ignition.

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with eyes, skin, and clothing. Wear personal protective equipment.

Hygiene measures	:	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Containers which are opened should be properly resealed and kept upright to prevent leakage.
Storage conditions	:	Do not handle, store or open near an open flame, sources of heat or sources of ignition. Store locked up. Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)

brake fluids.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. National occupational exposure and biological limit values

2,2' -oxybisethanol (111-46-6)

United Kingdom - Occupational Exposure Limits

Local name	2,2'-Oxydiethanol
WEL TWA (OEL TWA) [1]	101 mg/m³
WEL TWA (OEL TWA) [2]	23 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

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

1,1'-iminodipropan-2-ol (110-97-4)

DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	5 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	6.4 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects,oral	1.3 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	3.9 mg/m³
Long-term - systemic effects, dermal	6.3 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.278 mg/l
PNEC aqua (marine water)	0.028 mg/l
PNEC aqua (intermittent, freshwater)	2.777 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	2.33 mg/kg dwt
PNEC sediment (marine water)	0.233 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.303 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	15000 mg/l

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol (-)

DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	208 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	195 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects,oral	12.5 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	117 mg/m³
Long-term - systemic effects, dermal	125 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	2 mg/l
PNEC aqua (marine water)	0.2 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	6.6 mg/kg dwt
PNEC sediment (marine water)	0.66 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.46 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	111 kg/kg food
PNEC (STP)	
PNEC sewage treatment plant	500 mg/l

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

DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	8.3 mg/kg bw/day
Long-term - systemic effects, inhalation	29.1 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects,oral	4.1 mg/kg bw/day
Long-term - systemic effects, inhalation	7.2 mg/m³
Long-term - systemic effects, dermal	4.1 mg/kg bw/day
PNEC (Water)	
PNEC aqua (freshwater)	0.211 mg/l
PNEC aqua (marine water)	0.021 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.76 mg/kg dwt
PNEC sediment (marine water)	0.076 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.028 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	100 mg/l

2,2' -oxybisethanol (111-46-6)

DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	43 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	44 mg/m³

Long-term - local effects, inhalation	60 mg/m³

DNEL/DMEL (General population)

Long-term - systemic effects, inhalation	12 mg/m³
Long-term - systemic effects, dermal	21 mg/kg bodyweight/day
Long-term - local effects, inhalation	12 mg/m³

PNEC (Water)

PNEC aqua (freshwater)	10 mg/l
PNEC aqua (marine water)	1 mg/l

PNEC (Sediment)

PNEC sediment (freshwater)	20.9 mg/kg dwt
PNEC sediment (marine water)	2.09 mg/kg dwt

PNEC (Soil)

PNEC soil	1.53 mg/kg dwt

PNEC (STP)

PNEC sewage treatment plant	199.5 mg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

8.2.2. Personal protection equipment

Personal protective equipment:
Wear recommended personal protective equipment.

8.2.2.1. Eye and face protection

Eye protection:
Use eye protection to EN 166, designed to protect against liquid splashes. Safety glasses

8.2.2.2. Skin protection

Skin and body protection:
Long sleeved protective clothing. Wear suitable protective clothing

Hand protection:
Chemical resistant gloves (according to European standard NF EN 374 or equivalent). The recommendation is only valid for the supplied product and the stated application. Special working conditions, like heat or mechanical strain, which deviate from the test conditions, can reduce the protective effect provided by the recommended glove

Material	Permeation	Thickness (mm)	Comments
Nitrile rubber (NBR)	6 (> 480 minutes)	0,4	Glove recommendation: Camatril Velours® 730 (Kächele-Cama GmbH, source of supply see www.kcl.de) or comparable product.
In case of splash contact: Nitrile rubber (NBR)	6 (> 480 minutes)	0,4	Glove recommendation: Camatril Velours® 730 (Kächele-Cama GmbH, source of supply see www.kcl.de) or comparable product.

Other skin protection

Materials for protective clothing:
Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the protective equipment

8.2.2.3. Respiratory protection

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection. Type A - High-boiling (>65 °C) organic compounds

8.2.2.4. Thermal hazards

Thermal hazard protection:

Wear appropriate thermal protective clothing, when necessary.

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	Yellow.
Odour	:	Characteristic.
Odour threshold	:	Not available
Melting point	:	Not applicable
Freezing point	:	< -70 °C DIN 51583
Boiling point	:	> 260 °C 1,013 hPa, FMSVV 116
Flammability	:	Not applicable
Explosive properties	:	Not explosive.
Oxidising properties	:	Non oxidizing.
Explosive limits	:	Not available
Lower explosive limit (LEL)	:	1.5 vol %
Upper explosive limit (UEL)	:	Not available
Flash point	:	≈ 139 °C ASTM D 7094 (closed cup)
Auto-ignition temperature	:	> 200 °C DIN 51794
Decomposition temperature	:	≈ 360 °C DSC
pH	:	≈ 8.5 FMVSS 116 @20°C, Concentration: 50%
Viscosity, kinematic	:	15 – 17 mm²/s @20°C; FMVSS 116
Solubility	:	completely miscible with: water.
Log Kow	:	Not available
Vapour pressure	:	< 1 mbar @ 20°C
Vapour pressure at 50 °C	:	Not available
Density	:	1.06 g/cm³ @ 20°C 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
Particle dustiness	:	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Corrosion rate	:	< 6.25 mm/yr

9.2.2. Other safety characteristics

VOC content	:	0 %

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 of use. Hydroscopic.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources. Water, humidity.

10.5. Incompatible materials

No additional information available

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) : Based on available data, the classification criteria are not met
Acute toxicity (dermal) : Based on available data, the classification criteria are not met
Acute toxicity (inhalation) : Based on available data, the classification criteria are not met

Brake Fluid Dot 4	
ATE CLP (oral)	> 2000 mg/kg

2,2' -oxybisethanol (111-46-6)	
ATE CLP (oral)	500 mg/kg bodyweight

Skin corrosion/irritation : Based on available data, the classification criteria are not met
pH: ≈ 8.5 FMVSS 116 @20°C, Concentration: 50%
Serious eye damage/irritation : Based on available data, the classification criteria are not met
pH: ≈ 8.5 FMVSS 116 @20°C, Concentration: 50%
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

Brake Fluid Dot 4	
Viscosity, kinematic	15 – 17 mm²/s @20°C; FMVSS 116

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Hazardous to the aquatic environment, short–term (acute) : Based on available data, the classification criteria are not met
Hazardous to the aquatic environment, long–term (chronic) : Based on available data, the classification criteria are not met

12.2. Persistence and degradability

Brake Fluid Dot 4

Persistence and degradability	Readily biodegradable.
Biodegradation	90 % 15d

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Brake Fluid Dot 4

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII.

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII.

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Other adverse effects : No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this product

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Dispose of in accordance with local regulations.

Waste treatment methods : Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Dispose of contents/container in accordance with licensed collector's sorting instructions.

Sewage disposal recommendations : Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations. Do not contaminate ponds, waterways or ditches with chemical or used container.

Product/Packaging disposal recommendations : Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

European List of Waste (LoW) code : The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
15 01 10* - packaging containing residues of or contaminated by dangerous substances
16 01 13* - brake fluids

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID
Not regulated for transport

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

EU restriction list (REACH Annex XVII)

Reference code	Applicable on
3(b)	Brake Fluid Dot 4 ; Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol ; Tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] orthoborate ; 2,2' -oxybisethanol

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

VOC content : 0 %

Other information, restriction and prohibition regulations : Directive 92/85/EEC on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding as amended. Directive 94/33/EC on the protection of young people at work, as amended. Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended. For details, refer to section 3 and 8.

Directive 2012/18/EU (SEVESO III)

Seveso Additional information : Not applicable

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:

Section 1 - Section 16.

Data sources : 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.

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

Full text of H- and EUH-statements

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H361d	Suspected of damaging the unborn child.
Repr. 2	Reproductive toxicity, Category 2

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Repr. 2	H361d	Calculation method

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

Attachment to the Safety Data Sheet

Product Name: Brake Fluid Dot 4

Ford Int. Ref. No.: 171626 **Revision Date:** 24.06.2022

Involved Products:

	Finiscode	Part number	Container Size:
. 1	2 342 081	JAMJ J1704 AA2A	250 ml
. 2	2 342 083	JAMJ J1704 AC2A	1 l
. 3	1 850 519	YS5J M6C9103 A1B	250 ml
. 4	1 850 521	YS5J M6C9103 B1B	500 ml
. 5	1 850 522	YS5J M6C9103 C1B	1 l
. 6	1 850 523	YS5J M6C9103 D1B	5 l