



DOT 4

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

1.1. Product identifier

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

Use of the substance/mixture

Brake fluid

1.3. Details of the supplier of the safety data sheet

Robert Bosch GmbH

Auf der Breit 4

D-76227 Karlsruhe

Telephone: +49 721-942-0

Service Deutschland: 0 900 1

942 010-5

1.4. Emergency telephone number:

Emergency telephone :+49 (0) 6132 / 84463 (GBK Gefahrgut Buero GmbH, Ingelheim)

Responsible for the safety data sheet: sds@gbk-ingelheim.de

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This mixture is not classified as dangerous according to Directive 1999/45/EC.

2.2. Label elements

Special labelling of certain mixtures

Safety data sheet available for professional user on request.

Contains bisphenol A. May produce an allergic reaction.

2.3. Other hazards

High risk of slipping due to leakage/spillage of product.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixture of the following substances with non-hazardous admixtures



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Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification	
REACH No		
205-592-6	2-[2-(2-Butoxyethoxy) ethoxy] ethanol	< 10 %
143-22-6	Xi - Irritant R41	
603-183-00-0	Eye Dam. 1; H318	
203-872-2	2,2' -Oxybisethanol	< 10 %
111-46-6	Xn - Harmful R22	
603-140-00-6	Acute Tox. 4, STOT RE 2; H302 H373	
01-2119457857-21		
	Butylpolyglycol	< 10 %
9004-77-7	Xi - Irritant R36	
	Eye Irrit. 2; H319	
203-961-6	2-(2-Butoxyethoxy)ethanol	< 2,5 %
112-34-5	Xi - Irritant R36	
603-096-00-8	Eye Irrit. 2; H319	
01-2119475104-44		
203-820-9	1,1'-iminodipropan-2-ol, di-isopropanolamine	< 2,5 %
110-97-4	Xi - Irritant R36	
603-083-00-7	Eye Irrit. 2; H319	

Full text of R and H phrases: see Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove contaminated soaked clothing immediately.
In the event of persistent symptoms receive medical treatment.

After inhalation

Ensure of fresh air.
In the event of symptoms refer for medical treatment.

After contact with skin

Wash off immediately with soap and plenty of water.
Consult a doctor if skin irritation persists.

After contact with eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If eye irritation persists, consult a specialist.

After ingestion

Call a physician immediately.

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

Contact with eyes, skin or oral tissues may cause irritation.

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

Treat symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, dry chemical, carbon dioxide (CO₂), water-spray.

Extinguishing media which must not be used for safety reasons

Full water jet.

5.2. Special hazards arising from the substance or mixture

Fire may produce:
Carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x).

5.3. Advice for firefighters

In case of fire, wear suitable respiratory equipment with positive air supply.



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Protective suit.

Additional information

Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective clothing.

Ensure adequate ventilation.

Attention. Hazard of skidding.

6.2. Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

Do not discharge into the subsoil/soil.

6.3. Methods and material for containment and cleaning up

Take up with absorbent material (e.g. sand, kieselguhr, acid binder, general-purpose binder, sawdust).

Shovel into suitable container for disposal.

6.4. Reference to other sections

Observe protective instructions (see Sections 7 and 8).

Information for disposal look up chapter 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Ensure adequate ventilation.

Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion

No special protective measures against fire required.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

To be kept tightly closed, in a cool and dry place.

Advice on storage compatibility

Incompatible with oxidizing agents.

Further information on storage conditions

Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

Brake fluid

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Chemical name	ml/m ³	mg/m ³	F/ml	Category	Origin
111-46-6	2,2'-Oxydiethanol	23	101		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
112-34-5	2-(2-Butoxyethoxy)ethanol	15	101.2		TWA (8 h)	WEL
		10	67.5		STEL (15 min)	WEL

8.2. Exposure controls

Protective and hygiene measures

Use barrier skin cream.

Remove and wash contaminated clothing before re-use.

Wash hands before breaks and at the end of workday.

Avoid contact with skin, eyes and clothing.

When using, do not eat, drink or smoke.



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Respiratory protection

No personal respiratory protective equipment normally required.
In case of insufficient ventilation wear suitable respiratory equipment (gas filter type A).

Hand protection

Short time contact: Solvent-resistant gloves (nitrile rubber).
Glove material must be impermeable and resistant against product / substance / preparation. Gloves material should comply with breakthrough times, permeation rates, and degradation.
Requirements can vary as a function of the use. Therefore it is necessary to adhere additionally to the recommendations given by the manufacturer of protective gloves.

Eye protection

Safety goggles

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Colour: Amber
Odour: characteristic

pH-Value (at 20 °C): 8 **Test method**

Changes in the physical state

Melting point: < - 50 °C DIN/ISO 3016
Boiling point: > 265 °C SAE J1703
Flash point: > 110 °C ISO 2592

Explosive properties

The product is not explosive
Lower explosion limits: 0,7 vol. %
Upper explosion limits: 22 vol. %
Ignition temperature: > 200 °C DIN 51794
Vapour pressure: 0,001 hPa
(at 20 °C)
Density (at 20 °C): 1,065 g/cm³ ISO 3104
Water solubility: Completely miscible
Viscosity / kinematic: 16 mm²/s ISO 3104
(at 20 °C)
Solvent content: 3 %

9.2. Other information

No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No decomposition if suitable use.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reactions with oxidizing agents.

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

Carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x).

SECTION 11: Toxicological information



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11.1. Information on toxicological effects

Acute toxicity

No toxicological data available.

Irritation and corrosivity

Skin irritation (rabbit): Non-irritant (OECD 404)

Eye irritation: Non-irritant

Sensitising effects

Not classified.

Severe effects after repeated or prolonged exposure

STOT - Single exposure: Not classified.

STOT - Repeated exposure: Not classified.

Aspiration hazard: Not classified.

Carcinogenic/mutagenic/toxic effects for reproduction

Carcinogenicity: Not classified.

Mutagenicity: Not classified.

Teratogenicity: Not classified.

Additional information on tests

Classification in compliance with the assessment procedure specified in the EC guidelines 1999/45/EG.

Empirical data on effects on humans

Contact with eyes, skin or oral tissues may cause irritation.

Ingestion causes irritation of upper respiratory system and gastrointestinal disturbance

If appropriately handled and if in accordance with the general hygienic rules, no damages to health have become known.

SECTION 12: Ecological information

12.1. Toxicity

Ecological data are not available.

12.2. Persistence and degradability

Product is biodegradable.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT / vPvB substance.

12.6. Other adverse effects

Low hazard to waters.

Further information

Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Can be incinerated, when in compliance with local regulations.

Waste disposal number of waste from 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
Classified as hazardous waste.

Contaminated packaging

Empty containers should be taken for local recycling, recovery or waste disposal.

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

Packaging that cannot be cleaned should be disposed of like the product.

SECTION 14: Transport information



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Other applicable information

No hazardous material as defined by the transport regulations.

SECTION 15: Regulatory information

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

EU regulatory information

1999/13/EC (VOC): 0 %

National regulatory information

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing.

Water contaminating class (D): 1 - slightly water contaminating

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Full text of R phrases referred to under Sections 2 and 3

22 Harmful if swallowed.
36 Irritating to eyes.
41 Risk of serious damage to eyes.

Full text of H statements referred to under Sections 2 and 3

H302 Harmful if swallowed.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

Further Information

Data of items 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities.

The information describes exclusively the safety requirements for the product(s) and is based on the present level of our knowledge.

The delivery specifications are contained in the corresponding product sheet.

This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.

(n.a. = not applicable; n.d. = not determined)

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)