

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

1.1 Product identifier

febi 21754 brake fluid DOT 4
Article number 26746, 26461, 21754

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

1.2.1 Relevant uses

brake fluid

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company Ferdinand Bilstein GmbH + Co. KG
Wilhelmstr. 47
58256 Ennepetal / GERMANY
Phone +49 2333 911-0
Fax +49 2333 911-444
Homepage www.febi.com
E-mail info@febi.com

Address enquiries to

Technical information info@febi.com

Safety Data Sheet info@febi.com

1.4 Emergency telephone number

Advisory body +49 (0)89-19240 (24h) (english)

Company +49 2333 911-0

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

No classification.

2.2 Label elements

The product is required to be labelled in accordance with EC-Directives.

Hazard pictograms none

Signal word none

Hazard statements none

Precautionary statements none

Special labelling EUH210 Safety data sheet available on request.

2.3 Other hazards

Physico-chemical hazards No particular hazards known.

Human health dangers Frequent persistent contact with the skin can cause skin irritation.
If swallowed or in the event of vomiting, risk of product entering the lungs.

Environmental hazards Does not contain any PBT or vPvB substances.

Other hazards none

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
< 15	ethanol, 2-butoxy-, manufacture of, by-products from
	CAS: 161907-77-3, EINECS/ELINCS: 310-287-7, Reg-No.: 01-2119475115-41-XXXX
	GHS/CLP: Eye Dam. 1: H318
< 10	2,2' -oxybisethanol
	CAS: 111-46-6, EINECS/ELINCS: 203-872-2, EU-INDEX: 603-140-00-6
	GHS/CLP: Acute Tox. 4: H302
< 2	1,1'-Iminodipropan-2-ol
	CAS: 110-97-4, EINECS/ELINCS: 203-820-9, EU-INDEX: 603-083-00-7
	GHS/CLP: Eye Irrit. 2: H319

Comment on component parts

Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%.
For full text of H-statements and R-phrases: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Change soaked clothing.

Inhalation

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

Skin contact

When in contact with the skin, clean with soap and water.
Consult a doctor if skin irritation persists.

Eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Ingestion

Consult a doctor immediately.
Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Headache

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to the doctor.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide.
Water spray jet.
Dry powder.
Foam.

Extinguishing media that must not be used

Full water jet.

5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.
Nitrogen oxides (NOx).
Carbon monoxide (CO)

5.3 Advice for firefighters

Use self-contained breathing apparatus.

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

High risk of slipping due to leakage/spillage of product.
Forms slippery surfaces with water.

6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g. general-purpose binder).
Dispose of absorbed material in accordance with the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

No special measures necessary if used correctly.

The product is combustible.

Wash hands before breaks and after work.

Use barrier skin cream.

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

Contaminated work clothing should not be allowed out of the workplace.

Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.

Prevent penetration into the ground.

Do not store together with oxidizing agents.

The product is hygroscopic.

Keep in a cool place. Store in a dry place.

Keep container tightly closed.

Protect from heat/overheating.

Keep container in a well-ventilated place.

7.3 Specific end use(s)

See product use, SECTION 1.2



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SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Range [%]	Substance
< 10	2,2' -oxybisethanol
	CAS: 111-46-6, EINECS/ELINCS: 203-872-2, EU-INDEX: 603-140-00-6
	Long-term exposure: 23 ppm, 101 mg/m ³

DNEL

Range [%]	Substance
< 15	ethanol, 2-butoxy-, manufacture of, by-products from, CAS: 161907-77-3
	Industrial, dermal, Long-term - systemic effects: 208 mg/kg bw/d.
	Industrial, inhalative, Long-term - systemic effects: 195 mg/m ³ .
	general population, oral, Long-term - systemic effects: 12,5 mg/kg bw/d.
	general population, dermal, Long-term - systemic effects: 125 mg/kg bw/d.
	general population, inhalative, Long-term - systemic effects: 117 mg/m ³ .

PNEC

Range [%]	Substance
< 15	ethanol, 2-butoxy-, manufacture of, by-products from, CAS: 161907-77-3
	oral (food), 333 mg/kg food - ASF= 30.
	soil, 0,41 mg/kg dw.
	sediment (seawater), 0,66 mg/kg dw - ASF= 10000.
	sediment (freshwater), 6,6 mg/kg dw - ASF= 1000.
	sewage treatment plants (STP), 500 mg/l - ASF= 10.
	seawater, 0,18 mg/l - ASF= 1000.
	freshwater, 1,8 mg/l - ASF= 100.

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	Safety glasses.
Hand protection	The details concerned are recommendations. Please contact the glove supplier for further information. > 0,4 mm: Nitrile rubber, >480 min (EN 374).
Skin protection	Oil-resistant protective clothing.
Other	Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of these equipments to chemicals should be ascertained with the respective supplier. Avoid contact with eyes and skin. Do not inhale vapours.
Respiratory protection	Breathing apparatus in the event of high concentrations. Short term: filter apparatus, filter A.
Thermal hazards	none
Delimitation and monitoring of the environmental exposition	Comply with applicable environmental regulations limiting discharge to air, water and soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Color	yellow
Odor	characteristic
Odour threshold	not determined
pH-value	7 - 9 (20°C) (FMVSS 116)
pH-value [1%]	not determined
Boiling point [°C]	> 260 (FMVSS 116)
Flash point [°C]	> 125 (DIN ISO 2719)
Flammability (solid, gas) [°C]	> 200 (DIN 51794)
Lower explosion limit	1,5 Vol.%
Upper explosion limit	not determined
Oxidizing properties	no
Vapour pressure/gas pressure [kPa]	< 0,1 (20°C)
Density [g/ml]	~ 1,065 (DIN 51757) (20 °C / 68,0 °F)
Bulk density [kg/m ³]	not applicable
Solubility in water	miscible
Partition coefficient [n-octanol/water]	not determined
Viscosity	~15 -17mm ² /s (20°C) (FMVSS 116)
Relative vapour density determined in air	not determined
Evaporation speed	not determined
Melting point [°C]	<-70 (DIN 51583)
Autoignition temperature [°C]	no
Decomposition temperature [°C]	~ 360°C

9.2 Other information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).
Decomposes begins at ~ 360°C °C.

10.3 Possibility of hazardous reactions

Reactions with strong oxidizing agents.

10.4 Conditions to avoid

See SECTION 7.2.

10.5 Incompatible materials

not determined

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Range [%]	Substance
< 2	1,1'-Iminodipropan-2-ol, CAS: 110-97-4
	LD50, oral, Rat: 4765 mg/kg.
< 10	2,2' -oxybisethanol, CAS: 111-46-6
	LD50, dermal, Rabbit: 11890 mg/kg.
	LD50, oral, Rat: 12565 mg/kg.
	ATE, oral, 500 mg/kg.
< 15	ethanol, 2-butoxy-, manufacture of, by-products from, CAS: 161907-77-3
	≥ 20 - < 30% - H319; ≥ 30% H318.
	LD50, oral, Rat: 2360 - 2900 mg/kg bw.

Serious eye damage/irritation	not determined
Skin corrosion/irritation	not determined
Respiratory or skin sensitisation	not determined
Specific target organ toxicity — single exposure	not determined
Specific target organ toxicity — repeated exposure	not determined
Mutagenicity	not determined
Reproduction toxicity	not determined
Carcinogenicity	not determined
General remarks	

Toxicological data of complete product are not available.
 The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists.

SECTION 12: Ecological information

12.1 Toxicity

Range [%]	Substance
< 2	1,1'-Iminodipropan-2-ol, CAS: 110-97-4
	LC50, (96h), Brachidanio rerio: > 100 - 2200 mg/l.
	EC50, (72h), Algae: 270 mg/l.
	EC50, (48h), Daphnia magna: 2777 mg/l.
< 10	2,2' -oxybisethanol, CAS: 111-46-6
	LC50, (96h), fish: > 1000 mg/l.
	EC50, (24h), Daphnia magna: > 10000 mg/l.
< 15	ethanol, 2-butoxy-, manufacture of, by-products from, CAS: 161907-77-3
	LC50, (96h), fish: > 1000 mg/l.

12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	The product is biodegradable.

12.3 Bioaccumulative potential

No information available.

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12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Other adverse effects

The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.
Do not discharge product unmonitored into the environment or into the drainage.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Coordinate disposal with the disposal contractor/authorities if necessary.
In according to RoHS!

Waste no. (recommended)

160113*

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Packaging that cannot be cleaned should be disposed of as for product.

Waste no. (recommended)

150102
150104
150110*

SECTION 14: Transport information

14.1 UN number

See SECTION 14.2 in accordance with UN shipping name

14.2 UN proper shipping name

Transport by land according to ADR/RID NO DANGEROUS GOODS

Inland navigation (ADN) NO DANGEROUS GOODS

Marine transport in accordance with IMDG NOT CLASSIFIED AS "DANGEROUS GOODS"

Air transport in accordance with IATA NOT CLASSIFIED AS "DANGEROUS GOODS"

14.3 Transport hazard class(es)

See SECTION 14.2 in accordance with UN shipping name

14.4 Packing group

See SECTION 14.2 in accordance with UN shipping name

14.5 Environmental hazards

See SECTION 14.2 in accordance with UN shipping name

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS	1967/548 (1999/45); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (Reach); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2015); IMDG-Code (2015, 37. Amdt.); IATA-DGR (2015).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
- Observe employment restrictions for people	no
- VOC (1999/13/CE)	0 %

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H319 Causes serious eye irritation.
H302 Harmful if swallowed.
H318 Causes serious eye damage.

16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform Chemical Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
TLV@/TWA = Threshold limit value – time-weighted average
TLV@STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative



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16.3 Other information

Classification procedure

Modified position none