

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

1.1 Product identifier

febi 23930 brake fluid DOT 4 PLUS
Article number 26748, 23932, 23930

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

For all uses not specified in SECTION 1.2.1

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

Human health dangers Frequent persistent contact with the skin can cause skin irritation.

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
1 - <10	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
1 - <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

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	Seek medical advice 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

None known.

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 (NO_x).
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.

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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 within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid formation of oil dust.
The product is combustible.
Wash hands before breaks and after work.
Do not eat, drink or smoke when using this product.
Use barrier skin cream.
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.
Do not store together with food and animal food/diet.
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

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational
exposure limits to be monitored (GB)

Range [%]	Substance
1 - < 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

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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, >60 min (EN 374). 0,7 mm: Butyl rubber, >480 min (EN 374).
Skin protection	Light protective clothing.
Other	Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity 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	yellowish
Odor	characteristic
Odour threshold	not determined
pH-value	7 - 8,5 (20°C) (FMVSS 116)
pH-value [1%]	not determined
Boiling point [°C]	> 260 (FMVSS 116)
Flash point [°C]	> 130 (DIN ISO 2592)
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]	~ 1,07 (DIN 51757) (20 °C / 68,0 °F)
Bulk density [kg/m³]	not applicable
Solubility in water	miscible
Partition coefficient [n-octanol/water]	not determined
Viscosity	~15 -17mm²/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]	not applicable
Decomposition temperature [°C]	not determined

9.2 Other information

none

SECTION 10: Stability and reactivity**10.1 Reactivity**

No dangerous reactions known if used as directed.

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10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with strong oxidizing agents.

10.4 Conditions to avoid

See SECTION 7.2.

10.5 Incompatible materials

Oxidizing agent

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product
ATE-mix, oral, > 2000 mg/kg bw.

Range [%]	Substance
1 - <10	1,1'-Iminodipropan-2-ol, CAS: 110-97-4
	LD50, oral, Rat: 4765 mg/kg.
1 - <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.

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 Frequent persistent contact with the skin can cause skin irritation.

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
1 - <10	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.
1 - <10	2,2' -oxybisethanol, CAS: 111-46-6
	LC50, (96h), fish: > 1000 mg/l.
	EC50, (24h), Daphnia magna: > 10000 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. (96%/4d)

12.3 Bioaccumulative potential

No information available.

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

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

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

For recycling, consult manufacturer.
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*

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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
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Inland navigation (ADN)	NO DANGEROUS GOODS
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Marine transport in accordance with IMDG	NOT CLASSIFIED AS "DANGEROUS GOODS"
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Air transport in accordance with IATA	NOT CLASSIFIED AS "DANGEROUS GOODS"
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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
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TRANSPORT-REGULATIONS	DOT-Classification, ADR (2015); IMDG-Code (2015, 37. Amdt.); IATA-DGR (2015).
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NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
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- Observe employment restrictions for people	no
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- VOC (1999/13/CE)	0%
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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.

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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

16.3 Other information**Classification procedure****Modified position**

SECTION 15 been added: EUH210 Safety data sheet available on request.
 SECTION 7 been added: Do not eat, drink or smoke when using this product.
 SECTION 8 been added: Comply with applicable environmental regulations limiting discharge to air, water and soil.
 SECTION 12 been added: The product is biodegradable.