

Ferdinand Bilstein GmbH + Co. KG

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SECTION 1: Identification of the substance / preparation and of the company**1.1 Product identifier**

febi 01089 antifreeze
Article number 22270, 22268, 05011, 01089, 31276, 80933

1.2 Relevant identified uses of the substance or mixture and uses advised against**1.2.1 Relevant uses**

Anti-freezing agents

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

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 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

sdb@chemiebuero.de

1.4 Emergency phone

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

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]**

see SECTION 16

2.1.2 Classification according to Regulation 67/548/EEC or 1999/45/EC**Hazard symbols**

Harmful

R-phrases

R 22: Harmful if swallowed.

2.2 Label elements**Labelling according to Regulation 67/548/EEC or 1999/45/EC****Hazard symbols**

Harmful

Contains:

Ethylene glycol

R-phrases

R 22: Harmful if swallowed.

S-phrases

S 2: Keep out of the reach of children.

S 46: If swallowed, seek medical advice immediately and show this container or label.

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2.3 Other hazards

Physico-chemical hazards	No particular hazards known.
Human health dangers	If swallowed or in the event of vomiting, risk of product entering the lungs. 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**3.1 Product-type:**

The product is a mixture.

Range [%]	Substance
90 - 95	Ethylene glycol CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1, ECB-Nr.: 01-2119456816-28-XXXX GHS/CLP: Acute Tox. 4 - H302 - STOT RE 2 - H373 EEC: Xn, R 22
1 - <5	Sodium 2-ethylhexanoate CAS: 19766-89-3, EINECS/ELINCS: 243-283-8 GHS/CLP: Repr. 2 - H361d EEC: Xn, R 63
0,1 - <0,5	disodium tetraborate CAS: 1330-43-4, EINECS/ELINCS: 215-540-4, EU-INDEX: 005-011-00-4 GHS/CLP: Repr. 1B - H360F - H360D EEC: T, R 60-61

Comment on component parts SVHC (Candidate List of Substances of Very High Concern for authorisation) $\geq 0,1\%$
CAS 1330-43-4 - disodium tetraborate
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	In case of contact with skin wash off immediately with soap and water. Consult a doctor if skin irritation persists.
Eye contact	In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.
Ingestion	Consult a doctor immediately. Rinse out mouth and give plenty of water to drink. Do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Tiredness
Diarrhoea
Spasms

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
If swallowed or in the event of vomiting, risk of product entering the lungs.

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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

Unknown risk of formation of toxic pyrolysis products.
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

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth).
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**

Use only in well-ventilated areas.
The product is combustible.
Remove soiled or soaked clothing immediately.
Do not eat, drink, smoke or take drugs at work.
Use barrier skin cream.
Wash hands before breaks and after work.

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.
Keep container tightly closed.
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
90 - 95	Ethylene glycol
	CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1, ECB-Nr.: 01-2119456816-28-XXXX
	Long-term exposure: 20 ppm, 52 mg/m ³ , Vapour, particulate: 10 mg/m ³
	Short-term exposure (15-minute): 40 ppm, 104 mg/m ³
0,1 - <0,5	disodium tetraborate
	CAS: 1330-43-4, EINECS/ELINCS: 215-540-4, EU-INDEX: 005-011-00-4
	Long-term exposure: 1 mg/m ³

Ingredients with occupational exposure limits to be monitored (EU)

Range [%]	Substance / EC LIMIT VALUES
90 - 95	Ethylene glycol
	CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1, ECB-Nr.: 01-2119456816-28-XXXX
	Eight hours: 20 ppm, 52 mg/m ³ , H
	Short-term (15-minute): 40 ppm, 104 mg/m ³

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. Nitrile rubber, >480 min (EN 374).
Skin protection	Light protective clothing.
Other	Avoid contact with eyes and skin. Do not inhale vapours. 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.
Respiratory protection	Breathing apparatus in the event of high concentrations. Short term: filter apparatus, combination filter A-P2.
Thermal hazards	none
Delimitation and monitoring of the environmental exposition	See SECTION 6+7.



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SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Form	liquid
Color	blue
Odor	mild
Odour threshold	not determined
pH-value	~ 7,5 - 9 (50%)
pH-value [1%]	not determined
Boiling point [°C]	not determined
Flash point [°C]	> 100 (DIN 51758)
Flammability [°C]	> 400 (DIN 51794)
Lower explosion limit	3,2 Vol. %
Upper explosion limit	15,3 Vol. %
Oxidizing properties	no
Vapour pressure/gas pressure [kPa]	< 0,01 (20°C)
Density [g/ml]	~ 1,12 (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	~21 mm ² /s (20°C) (DIN 51562/T1)
Relative vapour density determined in air	not determined
Evaporation speed	not determined
Melting point [°C]	not determined
Autoignition temperature [°C]	not applicable
Decomposition temperature	not determined

9.2 Other information

none

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).

10.3 Possibility of hazardous reactions

Reactions with acids, alkalies and 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.

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SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity**

Range [%]	Substance
0,1 - <0,5	disodium tetraborate, CAS: 1330-43-4
	LD50, oral, Rat: 2400 - 2600 mg/kg.
	LD50, dermal, Rabbit: > 2000 mg/kg.
90 - 95	Ethylene glycol, CAS: 107-21-1
	LD50, oral, Rat: 4000 mg/kg (Lit.).
	LD50, dermal, Rabbit: ~ 10600 mg/kg (Lit.).

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 product was classified on the basis of the calculation procedure of the preparation directive.

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. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 12: Ecological information**12.1 Toxicity**

Range [%]	Substance
0,1 - <0,5	disodium tetraborate, CAS: 1330-43-4
	LC50, (96h), fish: 74 mg/l.
90 - 95	Ethylene glycol, CAS: 107-21-1
	LC50, (96h), Oncorhynchus mykiss: 18500 mg/l.
	EC50, (16h), Pseudomonas putida: 10000 mg/l.
	EC50, (96h), Pseudokirchneriella subcapitata: 6500-7500 mg/l.

12.2 Persistence and degradability**Behaviour in environment compartments** not determined**Behaviour in sewage plant** not determined**Biological degradability** not determined**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.



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12.6 Other adverse effects

No classification on the basis of the calculation procedure of the preparation directive.

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

Disposal in an incineration plant in accordance with the regulations of the local authorities.
Dispose of as hazardous waste.

Waste no. (recommended) 160114*

Contaminated packaging

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

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 MARPOL73/78 and the IBC Code

not applicable

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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 (2013); IMDG-Code (2013, 36. Amdt.); IATA-DGR (2013).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
- Observe employment restrictions for people	yes
- VOC (1999/13/CE)	0%

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information**16.1 Classification according to Regulation (EC) No 1272/2008 [CLP]**

Hazard pictograms



Signal word

WARNING

Classification procedure

Acute Tox. 4 - H302 Harmful if swallowed.

Classification according to conversion table Annex VII 1272/2008/EC

16.2 R-phrases (SECTION 3)

R 63: Possible risk of harm to the unborn child.

R 22: Harmful if swallowed.

R 60: May impair fertility.

R 61: May cause harm to the unborn child.

16.3 Hazard statements (SECTION 3)

H361d Suspected of damaging the unborn child.

H302 Harmful if swallowed.

H373 May cause damage to organs through prolonged or repeated exposure.

H360F May damage fertility.

H360D May damage the unborn child.



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16.4 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

Modified position

SECTION 12 been added: Based on all available information not to be classified as PBT or vPvB respectively.
 SECTION 10 been added: No dangerous reactions known if used as directed.
 SECTION 7 been added: Prevent penetration into the ground.
 SECTION 7 been added: Do not store together with food and animal food/diet.
 SECTION 2 been added: Does not contain any PBT or vPvB substances.

16.5 Other information

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