

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

### 1.1 Product identifier

**febi 02374 antifreeze**  
**Article number: 89428, 88541, 02374**

### 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  
Wilhelmstr. 47  
58256 Ennepetal / GERMANY  
Phone +49 2333 911-0  
Fax +49 2333 911-444  
Homepage [www.febi.com](http://www.febi.com)  
E-mail [info@febi.com](mailto:info@febi.com)

#### Address enquiries to

**Technical information** [info@febi.com](mailto:info@febi.com)  
**Safety Data Sheet** [info@febi.com](mailto: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 [REGULATION (EC) No 1272/2008]

Acute Tox. 4: H302 Harmful if swallowed.  
STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure.  
Eye Irrit. 2: H319 Causes serious eye irritation.

### 2.2 Label elements

The product is required to be labelled in accordance with regulation (EC) No 1272/2008 (CLP).

#### Hazard pictograms



#### Signal word

WARNING

#### Contains:

Ethylene glycol

#### Hazard statements

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

#### Precautionary statements

P101 If medical advice is needed, have product container or label at hand.  
P102 Keep out of reach of children.  
P260 Do not breathe vapours.  
P270 Do not eat, drink or smoke when using this product.  
P301+P312 IF SWALLOWED: Call a POISON CENTER / doctor if you feel unwell.  
P501 Dispose of contents / container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.  
P280 Wear eye protection / face protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313 If eye irritation persists: Get medical advice / attention.

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**2.3 Other hazards**

**Physico-chemical hazards** No particular hazards known.  
**Other hazards** Further hazards were not determined with the current level of knowledge.

**SECTION 3: Composition / Information on ingredients**

**Product-type:**

3.2 The product is a mixture.

Range [%]	Substance
60 - < 100	Ethylene glycol
	CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1, Reg-No.: 01-2119456816-28-XXXX
	GHS/CLP: Acute Tox. 4: H302 - STOT RE 2: H373
1 - < 3	potassium 2-ethylhexanoate
	CAS: 3164-85-0, EINECS/ELINCS: 221-625-7, Reg-No.: 01-2119980714-29-XXXX
	GHS/CLP: Repr. 2: H361d - Eye Dam. 1: H318 - Skin Irrit. 2: H315

**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** Take off contaminated clothing and wash before reuse.

**Inhalation** Ensure supply of fresh air.  
In the event of symptoms seek 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** 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.  
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  
Spasms  
Diarrhoea  
If swallowed or in the event of vomiting, risk of product entering the lungs.

**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** foam, dry powder, water spray jet, carbon dioxide  
**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.  
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 within 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.  
Avoid spilling or spraying in enclosed areas.  
The product is combustible.  
Take off contaminated clothing and wash before reuse.  
Do not eat, drink or smoke when using this product.  
Use barrier skin cream.  
Wash hands before breaks and after work.  
Contaminated work clothing should not be allowed out of the workplace.

### 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)**

Substance
Ethylene glycol
CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1, Reg-No.: 01-2119456816-28-XXXX
Long-term exposure: 20 ppm, 52 mg/m <sup>3</sup> , Vapour, particulate: 10 mg/m <sup>3</sup>
Short-term exposure (15-minute): 40 ppm, 104 mg/m <sup>3</sup>

**Ingredients with occupational exposure limits to be monitored (EU)**

Substance / EC LIMIT VALUES
Ethylene glycol
CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1, Reg-No.: 01-2119456816-28-XXXX
Eight hours: 20 ppm, 52 mg/m <sup>3</sup> , H
Short-term (15-minute): 40 ppm, 104 mg/m <sup>3</sup>

**DNEL**

Substance
Ethylene glycol, CAS: 107-21-1
Industrial, dermal, Long-term - systemic effects: 106 mg/m <sup>3</sup> .
Industrial, inhalative, Long-term - local effects: 35 mg/m <sup>3</sup> .
general population, dermal, Long-term - systemic effects: 53 mg/m <sup>3</sup> .
general population, inhalative, Long-term - local effects: 7 mg/m <sup>3</sup> .
potassium 2-ethylhexanoate, CAS: 3164-85-0
Industrial, dermal, Long-term - systemic effects: 5,95 mg/kg bw/d.
Industrial, inhalative, Long-term - systemic effects: 32 mg/m <sup>3</sup> .
general population, oral, Long-term - systemic effects: 2,5 mg/kg bw/d.
general population, dermal, Long-term - systemic effects: 2,98 mg/kg bw/d.
general population, inhalative, Long-term - systemic effects: 8 mg/m <sup>3</sup> .

**PNEC**

Substance
Ethylene glycol, CAS: 107-21-1
freshwater, 10 mg/L.
seawater, 1 mg/L.
sediment (freshwater), 37 mg/kg.
soil, 1,53 mg/kg.
sewage treatment plants (STP), 199,5 mg/l (AF=10).
sediment (seawater), 3,7 mg/kg.
potassium 2-ethylhexanoate, CAS: 3164-85-0
soil, 1.06 mg/kg.
sediment (seawater), 637 µg/kg.
sediment (freshwater), 6.37 mg/kg.
sewage treatment plants (STP), 71.7 mg/L.
seawater, 36 µg/L.
freshwater, 360 µg/L.

## 8.2 Exposure controls

<b>Additional advice on system design</b>	Ensure adequate ventilation on workstation. Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.
<b>Eye protection</b>	Safety glasses. (EN 166:2001)
<b>Hand protection</b>	The details concerned are recommendations. Please contact the glove supplier for further information. > 0,4 mm: Nitrile rubber, >480 min (EN 374-1/-2/-3).
<b>Skin protection</b>	Light protective clothing.
<b>Other</b>	Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier. Avoid contact with eyes and skin. Do not inhale vapours.
<b>Respiratory protection</b>	Respiratory protection mask in the event of high concentrations. Short term: filter apparatus, combination filter A-P2. (DIN EN 14387)
<b>Thermal hazards</b>	No information available.
<b>Delimitation and monitoring of the environmental exposition</b>	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

<b>Form</b>	liquid
<b>Color</b>	yellow
<b>Odor</b>	characteristic
<b>Odour threshold</b>	No information available.
<b>pH-value</b>	7,8 - 8,5 (50%)
<b>pH-value [1%]</b>	No information available.
<b>Boiling point [°C]</b>	No information available.
<b>Flash point [°C]</b>	> 100 (DIN 51758)
<b>Flammability (solid, gas) [°C]</b>	not applicable
<b>Lower explosion limit</b>	No information available.
<b>Upper explosion limit</b>	No information available.
<b>Oxidising properties</b>	no
<b>Vapour pressure/gas pressure [kPa]</b>	<0,01 (20°C)
<b>Density [g/ml]</b>	ca. 1,12 (DIN 51757) (20 °C / 68,0 °F)
<b>Bulk density [kg/m³]</b>	not applicable
<b>Solubility in water</b>	miscible
<b>Partition coefficient [n-octanol/water]</b>	No information available.
<b>Viscosity</b>	> 20 mm²/s (20°C)
<b>Relative vapour density determined in air</b>	No information available.
<b>Evaporation speed</b>	No information available.
<b>Melting point [°C]</b>	No information available.
<b>Autoignition temperature [°C]</b>	> 400 (DIN 51757)
<b>Decomposition temperature [°C]</b>	No information available.

### 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).

### 10.3 Possibility of hazardous reactions

Reactions with acids, alkalies and oxidizing agents.

### 10.4 Conditions to avoid

Strong heating.

### 10.5 Incompatible materials

See SECTION 10.3.  
Oxidizing agent  
strong acids

### 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**

Product
inhalative, Based on the available information, the classification criteria are not fulfilled.:
dermal, Based on the available information, the classification criteria are not fulfilled.:
ATE-mix, oral, 557 mg/kg bw.
Substance
Ethylene glycol, CAS: 107-21-1
LD50, dermal, mouse: > 3500 mg/kg.
LD50, oral, Rat: 7712 mg/kg.
LC50, inhalative, Rat: > 2,5 mg/l 6h.
LDLo, oral, Human: ca. 1600 mg/kg.
potassium 2-ethylhexanoate, CAS: 3164-85-0
LD50, dermal, Rabbit: 2000 mg/kg bw.
LD50, oral, Rat: 2043 mg/kg bw.
LC50, inhalative, Rat: 110 mg/m <sup>3</sup> (8 h).

<b>Serious eye damage/irritation</b>	Toxicological data of complete product are not available. Irritant Calculation method
<b>Skin corrosion/irritation</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Respiratory or skin sensitisation</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Specific target organ toxicity — single exposure</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Specific target organ toxicity — repeated exposure</b>	Toxicological data of complete product are not available. May cause damage to organs through prolonged or repeated exposure. Calculation method
<b>Mutagenicity</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Reproduction toxicity</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Carcinogenicity</b>	Based on the available information, the classification criteria are not fulfilled.
<b>Aspiration hazard</b>	Based on the available information, the classification criteria are not fulfilled.
<b>General remarks</b>	

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

Product
Based on the available information, the classification criteria are not fulfilled.:
Substance
Ethylene glycol, CAS: 107-21-1
LC50, (96h), Pimephales promelas: 72 860 mg/l.
EC50, (96h), Selenastrum capricornutum: 6500 - 13000 mg/l.
EC50, (48h), Daphnia magna: > 100 mg/l OECD 202.
potassium 2-ethylhexanoate, CAS: 3164-85-0
LC50, (96h), fish: 100 mg/L.
EC50, (6d), Algae: 49.3 mg/L.
EC50, (48h), Crustacea: 85.4 mg/L.

### 12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	Biodegradable.

### 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

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 c 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

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

**Waste no. (recommended)** 160114\*

#### Contaminated packaging

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

**Waste no. (recommended)** 150110\*  
150102  
150104





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**SECTION 14: Transport information**

**14.1 UN number**

Transport by land according to ADR/RID not applicable

Inland navigation (ADN) not applicable

Marine transport in accordance with IMDG not applicable

Air transport in accordance with IATA not applicable

**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)**

Transport by land according to ADR/RID not applicable

Inland navigation (ADN) not applicable

Marine transport in accordance with IMDG not applicable

Air transport in accordance with IATA not applicable

**14.4 Packing group**

Transport by land according to ADR/RID not applicable

Inland navigation (ADN) not applicable

Marine transport in accordance with IMDG not applicable

Air transport in accordance with IATA not applicable

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**14.5 Environmental hazards**

Transport by land according to ADR/RID no

Inland navigation (ADN) no

Marine transport in accordance with IMDG no

Air transport in accordance with IATA no

**14.6 Special precautions for user**

Relevant information under SECTION 6 to 8.

**14.7 Transport in bulk according to Annex II of MARPOL 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** 1991/689 (2001/118); 2010/75; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2016/2037/EC); (EU) 2015/830; (EU) 2016/131; (EU) 517/2014

**TRANSPORT-REGULATIONS** ADR (2019); IMDG-Code (2019, 39. Amdt.); IATA-DGR (2019)

**NATIONAL REGULATIONS (GB):** EH40/2005 Workplace exposure limits (Second edition, published December 2011).

- **Observe employment restrictions for people** Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.

- **VOC (2010/75/CE)** 0

**15.2 Chemical safety assessment**

not applicable

**SECTION 16: Other information**

**16.1 Hazard statements (SECTION 03)**

H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H361d Suspected of damaging the unborn child.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H302 Harmful if swallowed.

## 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  
ATE = acute toxicity estimate  
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  
LC0 = lethal concentration, 0%  
LOAEL = lowest-observed-adverse-effect level  
MARPOL = International Convention for the Prevention of Marine Pollution from Ships  
NOAEL = No Observed Adverse Effect Level  
NOEC = No Observed Effect Concentration  
PBT = Persistent, Bioaccumulative and Toxic substance  
PNEC = Predicted No-Effect Concentration  
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals  
STP = Sewage Treatment Plant  
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

Acute Tox. 4: H302 Harmful if swallowed. (Calculation method)  
STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure. (Calculation method)  
Eye Irrit. 2: H319 Causes serious eye irritation. (Calculation method)

### Modified position

none