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

### 1.1 Product identifier

**febi 02374 antifreeze**
**Article number 89428, 88541, 75011, 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
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

Acute Tox. 4: H302 Harmful if swallowed.
STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure.

### 2.2 Label elements

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

**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.

**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 no eat, drink or smoke when using this product.
P301+P312 IF SWALLOWED: Call a POISON CENTER / doctor if you feel unwell.
P314 Get medical advice / attention 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.

### 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.

**Other hazards** Further hazards were not determined with the current level of knowledge.

## SECTION 3: Composition / Information on ingredients

**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, Reg-No.: 01-2119456816-28-XXXX |
| | GHS/CLP: Acute Tox. 4: H302 - STOT RE 2: H373 |

**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** 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

Diarrhoea
Spasms
Tiredness

### 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.
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.

The product is combustible.

Contaminated work clothing should not be allowed out of the workplace.
Do not eat, drink or smoke when using this product.
Use barrier skin cream.
Wash hands before breaks and after work.
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.

Keep container in a well-ventilated place.
Keep container tightly closed.

### 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 |
|---|---|
| 90 - 95 | 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/m³, Vapour, particulate: 10 mg/m³ |
| | Short-term exposure (15-minute): 40 ppm, 104 mg/m³ |

**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, Reg-No.: 01-2119456816-28-XXXX |
| | Eight hours: 20 ppm, 52 mg/m³, H |
| | Short-term (15-minute): 40 ppm, 104 mg/m³ |

**DNEL**

| Range [%] | Substance |
|---|---|
| 90 - 95 | Ethylene glycol, CAS: 107-21-1 |
| | Industrial, dermal, Long-term - systemic effects: 106 mg/m³. |
| | Industrial, inhalative, Long-term - local effects: 35 mg/m³. |
| | general population, dermal, Long-term - systemic effects: 53 mg/m³. |
| | general population, inhalative, Long-term - local effects: 7 mg/m³. |

**PNEC**

| Range [%] | Substance |
|---|---|
| 90 - 95 | Ethylene glycol, CAS: 107-21-1 |
| | soil, 1,53 mg/kg. |
| | sediment (freshwater), 20,9 mg/kg. |
| | sewage treatment plants (STP), 199,5 mg/l. |
| | seawater, 1 mg/l. |
| | freshwater, 10 mg/l. |

### 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.
> 0,4mm: Nitrile 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 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, combination filter A-P2.

**Thermal hazards**
No information available.

**Delimitation and monitoring of the environmental exposition**
See SECTION 6+7.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Form** | liquid |
| **Color** | yellow/green |
| **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 (solid, gas) [°C]** | > 400 (DIN 51794) |
| **Lower explosion limit** | not determined |
| **Upper explosion limit** | not determined |
| **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/m³]** | not applicable |
| **Solubility in water** | miscible |
| **Partition coefficient [n-octanol/water]** | not determined |
| **Viscosity** | not applicable |
| **Relative vapour density determined in air** | not determined |
| **Evaporation speed** | not determined |
| **Melting point [°C]** | not determined |
| **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.

### 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

See SECTION 10.3.
Oxidizing agent
strong acids

### 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, ~ 530 mg/kg bw. |

| Range [%] | Substance |
|---|---|
| 90 - 95 | 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. |

| | |
|---|---|
| **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** | Irritates the eyes and the skin. |
| | Toxicological data of complete product are not available.<br>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 |
|---|---|
| 90 - 95 | Ethylene glycol, CAS: 107-21-1 |
| | LC50, (96h), Pimephales promelas: 72860 mg/l. |
| | EC50, (96h), Selenastrum capricornutum: 6500 - 13000 mg/l. |
| | EC50, (48h), Daphnia magna: > 100 mg/l OECD 202. |

### 12.2 Persistence and degradability

| | |
|---|---|
| **Behaviour in environment compartments** | not determined |
| **Behaviour in sewage plant** | not determined |
| **Biological degradability** | Inherently 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 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 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).<br>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 Hazard statements (SECTION 3)

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
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**

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)

| | |
|---|---|
| **Modified position** | SECTION 2 been added: H373 May cause damage to organs through prolonged or repeated exposure.<br>SECTION 2 been added: STOT RE 2<br>SECTION 2 been added: H302 Harmful if swallowed.<br>SECTION 2 been added: Acute Tox. 4<br>SECTION 11 been added: Irritates the eyes and the skin.<br>SECTION 12 been added: Inherently biodegradable. |