

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

**febi 19400 antifreeze**  
**Article number 22278, 22276, 19402, 19400, 33831**

**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 not 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**

**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

#### Product-type:

The product is a mixture.

Range [%]	Substance
80 - 90	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

Do not induce vomiting.  
Seek medical advice immediately.  
Rinse out mouth and give plenty of water to drink.

#### 4.2 Most important symptoms and effects, both acute and delayed

Headache  
Drowsiness

#### 4.3 Indication of any immediate medical attention and special treatment needed

In the event of symptoms seek for medical treatment.  
If swallowed or in the event of vomiting, risk of product entering the lungs.  
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.

#### 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 with 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 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.  
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 tightly closed.  
Keep container in a well-ventilated place.  
Protect from heat/overheating.

### 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
80 - 90	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)**

Range [%]	Substance / EC LIMIT VALUES
80 - 90	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**

Range [%]	Substance
80 - 90	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> .

**PNEC**

Range [%]	Substance
80 - 90	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**

<b>Additional advice on system design</b>	Ensure adequate ventilation on workstation.
<b>Eye protection</b>	Safety glasses.
<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).
<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 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.
<b>Respiratory protection</b>	Breathing apparatus in the event of high concentrations. Short term: filter apparatus, combination filter A-P2.
<b>Thermal hazards</b>	not determined
<b>Delimitation and monitoring of the environmental exposition</b>	Comply with applicable environmental regulations limiting discharge to air, water and soil.

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

Form	liquid
Color	violet
Odor	faintly
Odour threshold	not determined
pH-value	~ 7,5 - 9 (33%)
pH-value [1%]	not determined
Boiling point [°C]	> 120
Flash point [°C]	> 110 (DIN 51758)
Flammability (solid, gas) [°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)
Bulk density [kg/m <sup>3</sup> ]	not applicable
Solubility in water	miscible
Partition coefficient [n-octanol/water]	not determined
Viscosity	~ 15 mm <sup>2</sup> /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 [°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, alkalis 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.

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

Product
ATE-mix, oral, 524,6 mg/kg bw.

Range [%]	Substance
80 - 90	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** 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
80 - 90	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** not determined

**12.3 Bioaccumulative potential**

No information available.

**12.4 Mobility in soil**

No information available.



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**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**

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

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**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**

<b>EEC-REGULATIONS</b>	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
<b>TRANSPORT-REGULATIONS</b>	DOT-Classification, ADR (2015); IMDG-Code (2015, 37. Amdt.); IATA-DGR (2015).
<b>NATIONAL REGULATIONS (GB):</b>	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
<b>- Observe employment restrictions for people</b>	Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.
<b>- VOC (1999/13/CE)</b>	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





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**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 deleted: No particular hazards known.  
SECTION 2 been added: H373 May cause damage to organs through prolonged or repeated exposure.  
SECTION 2 been added: STOT RE 2  
SECTION 2 been added: H302 Harmful if swallowed.  
SECTION 2 been added: Acute Tox. 4  
SECTION 7 been added: Do not eat, drink or smoke when using this product.  
SECTION 7 deleted: Do not eat, drink, smoke or take drugs at work.  
SECTION 8 been added: Comply with applicable environmental regulations limiting discharge to air, water and soil.  
SECTION 8 deleted: See SECTION 6+7.