

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

1.1 Product identifier

febi 01381 antifreeze
Article number: 80325, 22274, 22272, 12710, 01381, 33830, 71381

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.
Eye Dam. 1: H318 Causes serious eye damage.
Repr. 2: H361d Suspected of damaging the unborn child.

2.2 Label elements

The product is classified as hazardous in accordance to OSHA Standard 29 CFR 1910.1200 (HCS 2012)

Hazard pictograms



Signal word

DANGER

Contains:

Ethylene glycol EINECS: 203-473-3

potassium 2-ethylhexanoate EINECS: 221-625-7

Hazard statements

H302 Harmful if swallowed.

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

H318 Causes serious eye damage.

H361d Suspected of damaging the unborn child.

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 vapors.

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.

GHS.P501-2

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.

P310 Immediately call a POISON CENTER/doctor/...

P405 Store locked up.

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

none

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
60 - < 100	Ethylene glycol CAS: 107-21-1
1 - < 5	potassium 2-ethylhexanoate CAS: 3164-85-0

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: 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 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

No information available.

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.
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 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.

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.
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 (US)

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 ³ , EU
Short-term exposure (15-minute): 40 ppm, 104 mg/m ³

DNEL

Substance
Ethylene glycol, CAS: 107-21-1
Industrial, dermal, Long-term - systemic effects: 106 mg/m ³ .
Industrial, inhalative, Long-term - local effects: 35 mg/m ³ .
general population, dermal, Long-term - systemic effects: 53 mg/m ³ .
general population, inhalative, Long-term - local effects: 7 mg/m ³ .
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 ³ .
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 ³ .

PNEC

Substance
Ethylene glycol, CAS: 107-21-1
freshwater, 10 mg/l (AF=10).
seawater, 1 mg/l (AF=100).
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

Additional advice on system design	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.
Eye protection	Safety glasses. (EN 166:2001)
Hand protection	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).
Skin protection	Light protective clothing. 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 vapors.
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	Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Color	red
Odor	characteristic
Odor threshold	No information available.
pH-value	7,5 - 9 (33%)
pH-value [1%]	No information available.
Boiling point [°C]	120
Flash point [°C]	> 110 (DIN 51758)
Flammability [°C]	> 400 (DIN 51794)
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Oxidizing properties	no
Vapor pressure/gas pressure [kPa]	<0,01 (20°C)
Density [g/ml]	1,123 (DIN 51757)
Bulk density [kg/m³]	not applicable
Solubility in water	miscible
Partition coefficient [n-octanol/water]	No information available.
Viscosity	> 22 mm²/s (20 °C) (DIN 51562/T1)
Relative vapor density determined in air	No information available.
Evaporation speed	No information available.
Melting point [°C]	No information available.
Autoignition temperature [°C]	No information available.
Decomposition temperature [°C]	No information available.

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

Strong heating.

10.5 Incompatible materials

Oxidizing agent
Acids
Strong basic compounds

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 information available, the classification criteria have not been fulfilled.:
dermal, Based on the information available, the classification criteria have not been fulfilled.:
ATE-mix, oral, 556,0 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 ³ (8 h).

Serious eye damage/irritation	Toxicological data of complete product are not available. Risk of serious damage to eyes. Calculation method
Skin corrosion/irritation	Based on the information available, the classification criteria have not been fulfilled.
Respiratory or skin sensitisation	Based on the information available, the classification criteria have not been fulfilled.
Specific target organ toxicity — single exposure	Based on the information available, the classification criteria have not been fulfilled.
Specific target organ toxicity — repeated exposure	Toxicological data of complete product are not available. May cause damage to organs through prolonged or repeated exposure. Calculation method
Mutagenicity	Based on the information available, the classification criteria have not been fulfilled.
Reproduction toxicity	Toxicological data of complete product are not available. Suspected of damaging the unborn child. Calculation method
Carcinogenicity	Based on the information available, the classification criteria have not been fulfilled.
Aspiration hazard	Based on the information available, the classification criteria have not been fulfilled.
General remarks	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 information available, the classification criteria have not been 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	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.

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

RCRA Hazard Class (40CFR 261): Waste must be disposed of in accordance with federal, state and local environmental control regulations. Consult your local or regional authorities.

Product

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

Contaminated packaging

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

SECTION 14: Transport

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

DOT Road Shipment Information (49 CFR) 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"

DOT Road Shipment Information (49 CFR) 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

DOT Road Shipment Information (49 CFR) not applicable

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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

DOT Road Shipment Information (49 CFR) not applicable

14.5 Environmental hazards

Transport by land according to ADR/RID no

Inland navigation (ADN) no

Marine transport in accordance with IMDG no

DOT Road Shipment Information (49 CFR) 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

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

US Regulations

National regulations 29 CFR 1910.1200-HCS 2012, OSHA-PEL, ACGIH-TLV, NTP, IARC, SARA Title III, NFPA, TSCA, California - Prop. 65

- SARA, 302 This product does not contain any ingredients regulated under this list.

- SARA, 311 This product does not contain any ingredients regulated under this list.

- SARA, 313 This product contain one ingredient regulated under this list(40 CFR part 372.65): Glycol ethers

- CA Proposition 65 Some chemical substances Ethylene glycol (ingested)- CAS 107-21-1 in this material are named in California-P65 list.



WARNING: This product can expose you to chemicals including "Ethylene Glycol", which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov."

- TSCA All chemical substances in this material are included on or exempted from listing on the TSCA Inventory.

- FDA

American Conference of Governmental Industrial Hygienists - ACGIH not determined

International Agency for Research on Cancer IARC Does not contain any relevant substances fulfilling the classification criteria.

This product is named NTP - National Toxicology Program (contains Ethylene glycol).

HAP-VOC

Transport-regulations DOT-Classification, ADR (2017); IMDG-Code (2017, 38. Amdt.); IATA-DGR (2018).



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:

ACGIH = American Conference of Governmental Industrial Hygienists;
 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;
 CERCLA = Comprehensive Environmental Response, Compensation and Liability Act;
 CFR = Code of Federal Regulations;
 CPR = Controlled Products Regulations;
 DMEL = Derived Minimum Effect Level;
 DNEL = Derived No Effect Level;
 DOT = Department of Transportation;
 EC50 = Median effective concentration;
 EPA = Environmental Protection Agency;
 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;
 IARC = International Agency of Research on Cancer;
 IATA = International Air Transport Association;
 TSCA = Toxic Substance Control Act;
 HMIS = Hazardous Materials Identification System;
 NFPA = National Fire Protection Association;
 NIOSH = National Institute for Occupational Safety and Health;
 OSHA = Occupational Safety and Health Administration;
 LC50 = Lethal concentration, 50%;
 LD50 = Median lethal dose, 50%;
 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;
 SARA = Superfund Amendments and Reauthorization Act;
 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 Dam. 1: H318 Causes serious eye damage. (Calculation method)
 Repr. 2: H361d Suspected of damaging the unborn child. (Calculation method)

16.4 Ratings

HMIS Ratings

HEALTH	2*	2* - Moderate chronic Hazard
FLAMMABILITY	1	1 - Slight Hazard
PHYSICAL HAZARD	0	0 - Minimal Hazard
PERSONAL PROTECTION	X	X - Personal protection rating to be supplied by user depending on use conditions

NFPA Ratings

1	
2	0
-	

TOP, FLAMMABILITY: 1 - Slight Hazard
 LEFT, HEALTH: 2 - Moderate Hazard RIGHT, REACTIVITY: 0 - Minimal Hazard
 BOTTOM, SPECIAL NOTICE: -