

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

1.1 Product identifier

antifreeze

Article number: 22270, 22268, 05011, 01089, 31276, 77089, 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
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)

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 Irrit. 2: H319 Causes serious eye irritation.
Repr. 2: H361d Suspected of damaging the unborn child.

Ferdinand Bilstein GmbH + Co. KG

Date printed 15.03.2023, Revision 15.03.2023

Version 12.0

Page 2 / 15

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

WARNING

Contains:

Ethylene glycol, CAS: 107-21-1

potassium 2-ethylhexanoate, CAS: 3164-85-0

Hazard statements

H302 Harmful if swallowed.

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

H319 Causes serious eye irritation.

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.

P337+P313 If eye irritation persists: Get medical advice/attention.

P405 Store locked up.

2.3 Other hazards

Environmental hazards

Does not contain any PBT or vPvB substances.

Other hazards

None

This product is classified as hazardous in accordance to OSHA Standard 29 CFR 1910.1200.

SECTION 3: Composition / Information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

The product is a mixture.

Range [%]	Substance
90 - 95	Ethylene glycol
	CAS: 107-21-1
1 - < 2.5	potassium 2-ethylhexanoate
	CAS: 3164-85-0
< 0.1	1H-Indene-1,3(2H)-dione, 2-(2-quinoliny)-, sulfonated, sodium salts
	CAS: 95193-83-2

Comment on component parts

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

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 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

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

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 food and animal food/diet.

Do not store together with oxidizing agents.

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

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
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
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

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	If there is a risk of splashing: safety glasses
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, filter P2. (DIN EN 143)
Thermal hazards	None
Delimitation and monitoring of the environmental exposition	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

Physical state	Liquid
Form	Liquid
Color	blue
Odor	mild
Odor threshold	Not applicable
pH-value	ca. 7.5 - 9 (50%)
pH-value [1%]	No information available.
Boiling point [°C]	No information available.
Flash point [°C]	> 100 (DIN 51758))
Flammability [°C]	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Oxidizing properties	No
Vapor pressure/gas pressure [kPa]	< 0.01 kPa (20°C)
Density [g/cm³]	ca. 1.12 (DIN 51 757) (20 °C / 68,0 °F)
Relative density	Not determined
Bulk density [kg/m³]	Not applicable
Solubility in water	Miscible
Solubility other solvents	No information available.
Partition coefficient [n-octanol/water]	No information available.
Kinematic viscosity	No information available.
Relative vapour density	No information available.
Evaporation speed	No information available.
Melting point [°C]	No information available.
Auto-ignition temperature [°C]	No information available.
Decomposition temperature [°C]	No information available.
Particle characteristics	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

See SECTION 7.2.

10.5 Incompatible materials

Oxidizing agent
Acids

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

Product
ATE-mix, oral, 529 mg/kg bw
Substance
Ethylene glycol, CAS: 107-21-1
LD50, oral, Rat, 7712 mg/kg bw
ATE, oral, 500 mg/kg (Acute Tox. 4)
potassium 2-ethylhexanoate, CAS: 3164-85-0
LD50, oral, Rat, 2043 mg/kg bw
1H-Indene-1,3(2H)-dione, 2-(2-quinoliny)-, sulfonated, sodium salts, CAS: 95193-83-2
LD50, oral, Rat, > 2000 mg/kg bw

Acute dermal toxicity

Product
dermal, Based on the information available, the classification criteria have not been fulfilled.
Substance
Ethylene glycol, CAS: 107-21-1
LD50, dermal, mouse, > 3500 mg/kg bw
potassium 2-ethylhexanoate, CAS: 3164-85-0
LD50, dermal, Rabbit, 2000 mg/kg bw

Acute inhalational toxicity

Product
inhalative, Based on the information available, the classification criteria have not been fulfilled.
Substance
Ethylene glycol, CAS: 107-21-1
LC50, inhalative, Rat, > 2.5 mg/L air, 6h
potassium 2-ethylhexanoate, CAS: 3164-85-0
LC50, inhalative, Rat, 110 mg/m ³ (8 h)

Serious eye damage/irritation

Toxicological data of complete product are not available.
Irritant
Calculation method

Substance
Ethylene glycol, CAS: 107-21-1
Eye, Rabbit, In vivo study, non-irritating
potassium 2-ethylhexanoate, CAS: 3164-85-0
Eye, in vitro / ex vivo, OECD 437, corrosive

Skin corrosion/irritation

Based on the information available, the classification criteria have not been fulfilled.

Substance
Ethylene glycol, CAS: 107-21-1
dermal, Rabbit, In vivo study, non-irritating

Ferdinand Bilstein GmbH + Co. KG

Date printed 15.03.2023, Revision 15.03.2023

Version 12.0

Page 9 / 15

potassium 2-ethylhexanoate, CAS: 3164-85-0

Rabbit, in vivo, OECD 404, irritant

Respiratory or skin sensitisation Based on the information available, the classification criteria have not been fulfilled.

Substance

Ethylene glycol, CAS: 107-21-1

dermal, Guinea pig, In vivo study, non-sensitizing

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

Substance

Ethylene glycol, CAS: 107-21-1

NOAEL, dermal, dogs, 2200 mg/kg bw/day, adverse effect observed

NOEL, oral, Rat, 150 mg/kg bw/day, OECD 408, adverse effect observed

Mutagenicity Based on the information available, the classification criteria have not been fulfilled.

Substance

Ethylene glycol, CAS: 107-21-1

in vitro, OECD 471, no adverse effect observed

Reproduction toxicity Toxicological data of complete product are not available.
Suspected of damaging the unborn child.
Calculation method

- Fertility

Substance

Ethylene glycol, CAS: 107-21-1

NOAEL, oral, Rat, > 1000 mg/kg bw/day, no adverse effect observed

potassium 2-ethylhexanoate, CAS: 3164-85-0

NOAEL, Rat, 300 mg/kg bw/day (P0)

- Development

Substance

Ethylene glycol, CAS: 107-21-1

NOAEL, oral, Rat, 500 mg/kg bw/day, no adverse effect observed

potassium 2-ethylhexanoate, CAS: 3164-85-0

NOAEL, Rat, 300 mg/kg bw/day (P0)

Carcinogenicity Based on the information available, the classification criteria have not been fulfilled.

Substance

Ethylene glycol, CAS: 107-21-1

NOAEL, oral, Rat, 1000 mg/kg bw/day, In vivo study, no adverse effect observed

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, (28d), fish, 1.5 g/L
LC50, (3d), fish, 72.86 g/L
EC50, (4d), Invertebrates, 3.536 - 13 g/L
EC50, (21d), Invertebrates, 33.911 g/L
EC50, (48h), Invertebrates, 100 mg/L
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
1H-Indene-1,3(2H)-dione, 2-(2-quinoliny)-, sulfonated, sodium salts, CAS: 95193-83-2
LC50, (48h), fish, 1000 mg/L

12.2 Persistence and degradability

Behaviour in environment compartments

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 Endocrine disrupting properties

Contains no ingredients with endocrine-disrupting properties.

12.7 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

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.

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.

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 applicable

Ferdinand Bilstein GmbH + Co. KG

Date printed 15.03.2023, Revision 15.03.2023

Version 12.0

Page 12 / 15

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

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

Air transport in accordance with IATA No

DOT Road Shipment Information (49 CFR) 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

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

- SARA, 313

This product contain one ingredient regulated under this list.

- 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

International Agency for Research on
Cancer IARC

National Toxicology Program - NTP

Ethylene glycol is named in the NTP - National Toxicology Program.

HAP-VOC

100 %

Transport-regulations

DOT-Classification, ADR (2023); IMDG-Code (2023, 41. Amdt.); IATA-DGR (2023)

15.2 Chemical safety assessment

Not applicable

SECTION 16: Other information

16.1 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;

16.2 Ratings

Ferdinand Bilstein GmbH + Co. KG

Date printed 15.03.2023, Revision 15.03.2023

Version 12.0

Page 15 / 15

NFPA Ratings



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

HMIS Ratings

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	1
PERSONAL PROTECTION	X

2* - Moderate chronic Hazard
1 - Slight Hazard
1 - Slight Hazard
X - Personal protection rating to be supplied by user depending on use conditions

PERSONAL PROTECTION:

- A - Safety Glasses
- B - Safety Glasses and Gloves
- C - Safety Glasses, Gloves and Protection Apron
- D - Face Shield, Gloves and Protection Apron
- E - Safety Glasses, Gloves and Dust Respirator
- F - Safety Glasses, Gloves, Protection Apron and Dust Respirator
- G - Safety Glasses, Gloves and Vapor Respirator.
- H - Splash Goggles, Gloves, Protection Apron and Vapor Respirator.
- I - Safety Glasses, Gloves, Dust Respirator and Vapor Respirator.
- J - Splash Goggles, Gloves, Protection Apron, Dust Respirator and Vapor Respirator.
- K - Airline Mask or Hood, Gloves, Full Suit and Boots.
- X - Personal protection rating to be supplied by user depending on use conditions

Modified position

SECTION 11 been added: Contains no ingredients with endocrine-disrupting properties.
SECTION 12 been added: Contains no ingredients with endocrine-disrupting properties.

