

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

1.1 Product identifier

antifreeze G 13
Article number: 38202, 38201, 38200

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
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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

STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure.
Repr. 2: H361d Suspected of damaging the unborn child.
Eye Irrit. 2: H319 Causes serious eye irritation.
Acute Tox. 4: H302 Harmful if swallowed.

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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

Methyl-1H-benzotriazole, CAS: 29385-43-1

Hazard statements

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

H361d Suspected of damaging the unborn child.

H319 Causes serious eye irritation.

H302 Harmful if swallowed.

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.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P405 Store locked up.

GHS.P501-2

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.

P270 Do not eat, drink or smoke when using this product.

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

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

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
30 - < 80	Ethylene glycol CAS: 107-21-1
> 10	Glycerol CAS: 56-81-5
1 - < 3	potassium 2-ethylhexanoate CAS: 3164-85-0
0.1 - < 0.3	Methyl-1H-benzotriazole CAS: 29385-43-1

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	Take off contaminated clothing and wash before reuse.
Inhalation	Ensure supply of fresh air. In the event of symptoms seek medical treatment.
Skin contact	When in contact with the skin, clean 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	Seek medical advice 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.
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.
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Extinguishing media that must not be used	Full water jet.
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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.

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.

Do not store together with oxidizing agents.

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 (US)

Substance
Ethylene glycol
CAS: 107-21-1
Long-term exposure: 100 mg/m ³ , ACGIH (Ceiling (aerosol only))
Glycerol
CAS: 56-81-5
Long-term exposure: 15 mg/m ³ , (mist) total dust

DNEL

Substance
Glycerol, CAS: 56-81-5
Industrial, inhalative, Long-term - local effects, 56 mg/m ³
general population, oral, Long-term - systemic effects, 229 mg/kg bw/day
general population, inhalative, Long-term - local effects, 33 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
Methyl-1H-benzotriazole, CAS: 29385-43-1
Industrial, dermal, Long-term - systemic effects, 300 µg/kg bw/day
Industrial, inhalative, Long-term - systemic effects, 21.2 mg/m ³
general population, oral, Long-term - systemic effects, 10 µg/kg bw/day
general population, dermal, Long-term - systemic effects, 10 µg/kg bw/day
general population, inhalative, Long-term - systemic effects, 350 µg/m ³

PNEC

Substance
Glycerol, CAS: 56-81-5
sediment (seawater), 330 µg/kg sediment dw
sediment (freshwater), 3.3 mg/kg sediment dw
sewage treatment plants (STP), 1 g/L
seawater, 88.5 µg/L
freshwater, 885 µg/L
soil, 141 µg/kg soil dw
potassium 2-ethylhexanoate, CAS: 3164-85-0
seawater, 36 µg/L
sewage treatment plants (STP), 71.7 mg/L
sediment (freshwater), 6.37 mg/kg
freshwater, 360 µg/L
sediment (seawater), 637 µg/kg
soil, 1.06 mg/kg
Methyl-1H-benzotriazole, CAS: 29385-43-1

sediment (freshwater), 117 µg/kg sediment dw
freshwater, 8 µg/L
sewage treatment plants (STP), 39.4 mg/L
sediment (seawater), 292 µg/kg sediment dw
soil, 18.7 µg/kg soil dw
seawater, 20 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	> 0.5 mm; Nitrile rubber, >480 min (EN 374-1/-2/-3). The details concerned are recommendations. Please contact the glove supplier for further information.
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	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	red
Odor	mild
Odor threshold	No information available.
pH-value	8.35
pH-value [1%]	No information available.
Boiling point [°C]	> 170 (352°F)
Flash point [°C]	122
Flammability	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Oxidizing properties	No
Vapor pressure/gas pressure [kPa]	No information available.
Density [g/cm³]	1.13 (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	> 1
Evaporation speed	No information available.
Melting point [°C]	-18
Auto-ignition temperature [°C]	Not applicable
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

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

Reactions with acids, alkalis and oxidizing agents.

10.4 Conditions to avoid

See SECTION 7.2.



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10.5 Incompatible materials

Not determined

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

Substance
Glycerol, CAS: 56-81-5
LD50, oral, Rat, 27 mg/kg bw
Ethylene glycol, CAS: 107-21-1
LD50, oral, Rat, 4700 mg/kg
LDLo, oral, Human, ca. 1600 mg/kg Lit.
potassium 2-ethylhexanoate, CAS: 3164-85-0
LD50, oral, Rat, 2043 mg/kg bw
Methyl-1H-benzotriazole, CAS: 29385-43-1
LD50, oral, Rat, 720 mg/kg
NOAEL, oral, Rat, 150 mg/kg bw/day

Acute dermal toxicity

Product
ATE-mix, dermal, mouse, > 3500 mg/kg bw
Substance
Glycerol, CAS: 56-81-5
LD50, dermal, Guinea pig, 45 mL/kg bw
Ethylene glycol, CAS: 107-21-1
LD50, dermal, mouse, > 3500 mg/kg Lit.
potassium 2-ethylhexanoate, CAS: 3164-85-0
LD50, dermal, Rabbit, 2000 mg/kg bw
Methyl-1H-benzotriazole, CAS: 29385-43-1
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, > 200 mg/m ³ 4h
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
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

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potassium 2-ethylhexanoate, CAS: 3164-85-0
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Rabbit, in vivo, OECD 404, irritant

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

Substance

Glycerol, CAS: 56-81-5

NOAEL, inhalative, Rat, 167 mg/m ³ air

NOEL, oral, Rat, 50000 ppm

Ethylene glycol, CAS: 107-21-1

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

NOAEL, oral, Rat, 150 mg/kg bw/day, adverse effect observed

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

- Fertility

Substance

potassium 2-ethylhexanoate, CAS: 3164-85-0
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NOAEL, Rat, 300 mg/kg bw/day (P0)

- Development

Substance

potassium 2-ethylhexanoate, CAS: 3164-85-0
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NOAEL, Rat, 300 mg/kg bw/day (P0)

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
Glycerol, CAS: 56-81-5
LC50, (4d), fish, 54 g/L
EC50, (24h), Invertebrates, 10 g/L
Ethylene glycol, CAS: 107-21-1
LC50, (96h), fish, 41000 mg/l
EC50, (48h), Daphnia magna, 34250 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
Methyl-1H-benzotriazole, CAS: 29385-43-1
LC50, (96h), fish, 55 - 180 mg/L
EC50, (72h), Algae, 29 - 75 mg/L
EC50, (48h), Invertebrates, 8.58 - 15.8 mg/L
NOEC, (21d), Invertebrates, 18.4 mg/L

12.2 Persistence and degradability

Behaviour in environment
compartments

Behaviour in sewage plant

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 Endocrine disrupting properties

Contains no ingredients with endocrine-disrupting properties.

12.7 Other adverse effects

No classification on the basis of the calculation procedure of the preparation directive.

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

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

Contaminated packaging

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

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 CLASSIFIED AS "DANGEROUS GOODS"

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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 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

This product is named NTP - National Toxicology Program.

HAP-VOC

HAP's-content: 100%

Transport-regulations

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

15.2 Chemical safety assessment

For this product a chemical safety assessment has not been carried out.

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

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NFPA Ratings



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

HMIS Ratings

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X

2* - Moderate chronic Hazard
1 - Slight Hazard
0 - Minimal 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.