

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

1.1 Product identifier

antifriz G12++ (-35°C Ready Mix)
Article number: 172018, 172019, 172020

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 if swallowed. (kidneys)

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

Hazard statements H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements 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.
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.

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2.3 Other hazards

Human health dangers	It is essential for pregnant women to avoid inhaling the product and not to let it come in contact with the skin.
Environmental hazards	Does not contain any PBT or vPvB substances.
Other hazards	Contains no ingredients with endocrine-disrupting properties. 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

Range [%]	Substance
45- 50	Ethylene glycol
	CAS: 107-21-1
0,1 - <1	Methyl-1H-benzotriazole
	CAS: 29385-43-1

Comment on component parts 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	In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.
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

Irritant effects
Tiredness
Unconsciousness
Headache
Vertigo

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), not combusted hydrocarbons

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.

Use personal protective equipment (protective gloves, safety glasses, protective clothing).

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

Provide solvent-resistant and impermeable floor.

Use solvent-resistant equipment.

Use only in well-ventilated areas.

Keep away from all sources of ignition - Refrain from smoking.

Take precautionary measures against static discharges.

Vapors can form an explosive mixture with air.

Remove soiled or soaked clothing immediately.

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

Wash hands before breaks and after work.

Use barrier skin cream.

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.

Do not store with alkalis.

Do not store together with food and animal food/diet.

Protect from heat/overheating and from sun.

Keep container in a well-ventilated place.

Keep container tightly closed.

Recommended storage temperature: < 40°C

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
Long-term exposure: 20 ppm, 52 mg/m ³ , EU
Short-term exposure (15-minute): 40 ppm, 104 mg/m ³

DNEL

Substance
Methyl-1H-benzotriazole, CAS: 29385-43-1
Industrial, inhalative, Long-term - systemic effects, 21.2 mg/m ³
Industrial, dermal, Long-term - systemic effects, 300 µg/kg bw/day
general population, inhalative, Long-term - systemic effects, 350 µg/m ³
general population, dermal, Long-term - systemic effects, 10 µg/kg bw/day
general population, oral, Long-term - systemic effects, 10 µg/kg bw/day
Ethylene glycol, CAS: 107-21-1
Industrial, inhalative, Long-term - local effects, 35 mg/m ³
Industrial, dermal, Long-term - systemic effects, 106 mg/m ³
general population, inhalative, Long-term - local effects, 7 mg/m ³
general population, dermal, Long-term - systemic effects, 53 mg/m ³

PNEC

Substance
Methyl-1H-benzotriazole, CAS: 29385-43-1
freshwater, 8 µg/L
seawater, 20 µg/L
sewage treatment plants (STP), 39.4 mg/L
sediment (freshwater), 117 µg/kg sediment dw
sediment (seawater), 292 µg/kg sediment dw
soil, 18.7 µg/kg soil dw
Ethylene glycol, CAS: 107-21-1
sediment (seawater), 3,7 mg/kg
sewage treatment plants (STP), 199,5 mg/l (AF=10)
soil, 1,53 mg/kg
sediment (freshwater), 37 mg/kg
seawater, 1 mg/L
freshwater, 10 mg/L



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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. 0,45 mm Nitrile rubber, >480 min (EN 374-1/-2/-3).
Skin protection	Light protective clothing.
Other	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. It is essential for pregnant women to avoid inhaling the product and not to let it come in contact with the skin.
Respiratory protection	In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear appropriate 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	Purple
Odor	characteristic
Odor threshold	No information available.
pH-value	7,5 - 11
pH-value [1%]	Not determined
Boiling point or initial boiling point and boiling range [°C]	>107
Flash point [°C]	No information available.
Flammability	Not applicable
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Oxidizing properties	No
Vapor pressure/gas pressure [kPa]	No information available.
Density [g/cm ³]	1,05 - 1,08
Relative density	Not determined
Bulk density [kg/m ³]	Not applicable
Solubility in water	Miscible
Solubility other solvents	No information available.
Partition coefficient n-octanol/water (log value)	No information available.
Kinematic viscosity	No information available.
Relative vapour density	No information available.
Melting point [°C]	<= -35
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 strong oxidizing agents.
Reactions with acids.

10.4 Conditions to avoid

Strong heating.



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10.5 Incompatible materials

No information available.

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

Substance
Methyl-1H-benzotriazole, CAS: 29385-43-1
LD50, oral, Rat, 720 mg/kg (Lit.)
NOAEL, oral, Rat, 150 mg/kg bw/day
Ethylene glycol, CAS: 107-21-1
LD50, oral, Rat, 7712 mg/kg bw
ATE, oral, 500 mg/kg (Acute Tox. 4)

Acute dermal toxicity

Substance
Methyl-1H-benzotriazole, CAS: 29385-43-1
LD50, dermal, Rat, > 2000 mg/kg
Ethylene glycol, CAS: 107-21-1
LD50, dermal, mouse, > 3500 mg/kg bw

Acute inhalational toxicity

Substance
Ethylene glycol, CAS: 107-21-1
LC50, inhalative, Rat, > 2,5 mg/L air, 6h

Serious eye damage/irritation Based on the information available, the classification criteria have not been fulfilled.

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

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

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 May cause damage to organs through prolonged or repeated exposure if swallowed. (kidneys)
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.



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Substance
Ethylene glycol, CAS: 107-21-1
in vitro, OECD 471, no adverse effect observed

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

- Fertility

Substance
Ethylene glycol, CAS: 107-21-1
NOAEL, oral, Rat, > 1000 mg/kg bw/day, no adverse effect observed

- Development

Substance
Ethylene glycol, CAS: 107-21-1
NOAEL, oral, Rat, 500 mg/kg bw/day, no adverse effect observed

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. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 12: Ecological information

12.1 Toxicity

Substance
Methyl-1H-benzotriazole, CAS: 29385-43-1
LC50, (96h), fish, 55 - 180 mg/L
EC50, (48h), Invertebrates, 8.58 - 15.8 mg/L
EC50, (72h), Algae, 29 - 75 mg/L
NOEC, (21d), Invertebrates, 18.4 mg/L
Ethylene glycol, CAS: 107-21-1
LC50, (3d), fish, 72.86 g/L
LC50, (28d), fish, 1,5 g/L
EC50, (48h), Invertebrates, 100 mg/L
EC50, (21d), Invertebrates, 33,911 g/L
EC50, (4d), Invertebrates, 3,536 - 13 g/L

12.2 Persistence and degradability

Behaviour in environment compartments

Behaviour in sewage plant

Biological degradability The product is biodegradable.



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12.3 Bioaccumulative potential

Product has having no bioaccumulation potential.

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

Does not contain any relevant substances fulfilling the classification criteria.

12.7 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

Product

Disposal in an incineration plant in accordance with the regulations of the local authorities.

Contaminated packaging

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



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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

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

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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

- SARA, 311

- SARA, 313

- 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 (ingested)- CAS 107-21-1", 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.

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

Transport-regulations DOT-Classification, ADR (2023); IMDG-Code (2023, 41. Amdt.); IATA-DGR (2024)

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 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

1.3, 1.4, 2.3, 3.2, 4.2, 8.1, 8.2, 9.1, 11.1, 11.2, 12.6, 12.7, 15.1, 15.2, 16.1, 16.2, 16.3