

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

### 1.1 Product identifier

**antifreeze G12 (-35°C Ready Mix)**  
**Article number: 172005, 172006, 172007**

### 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

For all uses not specified in SECTION 1.2.1

### 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](http://www.febi.com)  
E-mail [info@febi.com](mailto:info@febi.com)

#### Address enquiries to

**Technical information** [info@febi.com](mailto:info@febi.com)

**Safety Data Sheet** [info@febi.com](mailto: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, CAS: 107-21-1

#### 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 vapors/spray.  
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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Version 7.0. Supersedes version: 5.0

Page 2 / 13

**2.3 Other hazards**

<b>Human health dangers</b>	It is essential for pregnant women to avoid inhaling the product and not to let it come in contact with the skin.
<b>Environmental hazards</b>	Does not contain any PBT or vPvB substances.
<b>Other hazards</b>	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**

The product is a mixture.

Range [%]	Substance
40 - 50	Ethylene glycol
	CAS: 107-21-1

**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**

<b>General information</b>	Change soaked clothing.
<b>Inhalation</b>	Ensure supply of fresh air. In the event of symptoms seek medical treatment.
<b>Skin contact</b>	In case of contact with skin wash off immediately with soap and water. Consult a doctor if skin irritation persists.
<b>Eye contact</b>	In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.
<b>Ingestion</b>	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**

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**

<b>Suitable extinguishing media</b>	Carbon dioxide. Water spray jet. Dry powder. Foam.
<b>Extinguishing media that must not be used</b>	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



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

**DNEL**

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

**PNEC**

Substance
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

**8.2 Exposure controls**

<b>Additional advice on system design</b>	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.
<b>Eye protection</b>	Safety glasses. (EN 166:2001)
<b>Hand protection</b>	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).
<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 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.
<b>Respiratory protection</b>	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.
<b>Thermal hazards</b>	None
<b>Delimitation and monitoring of the environmental exposition</b>	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	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]	>105
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 <sup>3</sup> ]	1,05 - 1,08
Relative density	Not determined
Bulk density [kg/m <sup>3</sup> ]	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	Not applicable

### 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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Version 7.0. Supersedes version: 5.0

Page 6 / 13

**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
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
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.

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.



**Ferdinand Bilstein GmbH + Co. KG**

Date printed 18.04.2024, Revision 18.04.2024

Version 7.0. Supersedes version: 5.0

Page 8 / 13

**- 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
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** Not determined  
**Biological degradability** The product is biodegradable.

**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.





**Ferdinand Bilstein GmbH + Co. KG**

Date printed 18.04.2024, Revision 18.04.2024

Version 7.0. Supersedes version: 5.0

Page 9 / 13

**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

**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 18.04.2024, Revision 18.04.2024

Version 7.0. Supersedes version: 5.0

Page 10 / 13

**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

- 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](http://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

Chemical safety assessments for substances in this mixture were not 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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Date printed 18.04.2024, Revision 18.04.2024

Version 7.0. Supersedes version: 5.0

Page 13 / 13

**NFPA Ratings**



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

**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**

2.2, 2.3, 8.2, 9.1, 11.2, 12.6