

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

antifreeze Ready Mix G11 (-35°C)
Article number: 171998, 171999, 172003
UFI: 0TAC-MG39-G00Y-GY1G

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
 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 [REGULATION (GB) CLP]**

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**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 if swallowed. (kidneys)

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 vapours / 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.
 P314 Get medical advice / attention 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.

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

SECTION 3: Composition / Information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

The product is a mixture.

Range [%]	Substance
27 - 32	Ethylene glycol CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1, Reg-No.: 01-2119456816-28-XXXX GHS/CLP: Acute Tox. 4: H302 - STOT RE 2: H373
12 - 20	Glycerol CAS: 56-81-5, EINECS/ELINCS: 200-289-5
< 0.2	Potassium tetraborate tetrahydrate CAS: 12045-78-2, EINECS/ELINCS: 215-575-5, Reg-No.: 01-2119970730-37-XXXX GHS/CLP: Repr. 2: H361d

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	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

Tiredness
Unconsciousness
Headache
Vertigo

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to your 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 within 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 within 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.

Vapours 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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Date printed 08.03.2023, Revision 08.03.2023

Version 4.0. Supersedes version: 3.0

Page 5 / 14

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

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 , Vapour, particulate: 10 mg/m ³
Short-term exposure (15-minute): 40 ppm, 104 mg/m ³
Glycerol
CAS: 56-81-5, EINECS/ELINCS: 200-289-5
Long-term exposure: 10 mg/m ³

Ingredients with occupational exposure limits to be monitored (EU)

Substance / EC LIMIT VALUES
Ethylene glycol
CAS: 107-21-1, EINECS/ELINCS: 203-473-3, EU-INDEX: 603-027-00-1, Reg-No.: 01-2119456816-28-XXXX
Eight hours: 20 ppm, 52 mg/m ³ , H
Short-term (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, inhalative, Long-term - local effects, 7 mg/m ³
general population, dermal, Long-term - systemic effects, 53 mg/m ³
Glycerol, CAS: 56-81-5
Industrial, inhalative, Long-term - local effects, 56 mg/m ³
Potassium tetraborate tetrahydrate, CAS: 12045-78-2
Industrial, inhalative, Acute - local effects, 13.6 mg/m ³ (Dipotassium tetraborate CAS 1332-77-0)
Industrial, inhalative, Long-term - systemic effects, 7.8 mg/m ³ (Dipotassium tetraborate CAS 1332-77-0)
Industrial, inhalative, Long-term - local effects, 13.6 mg/m ³ (Dipotassium tetraborate CAS 1332-77-0)
Industrial, dermal, Long-term - systemic effects, 367.7 mg/kg bw/d (Dipotassium tetraborate CAS 1332-77-0)
Industrial, inhalative, Acute - systemic effects, 7.8 mg/m ³ (Dipotassium tetraborate CAS 1332-77-0)
general population, oral, Long-term - systemic effects, 0.92 mg/kg bw/d (Dipotassium tetraborate CAS 1332-77-0)
general population, inhalative, Long-term - systemic effects, 3.9 mg/m ³ (Dipotassium tetraborate CAS 1332-77-0)
general population, inhalative, Acute - systemic effects, 3.9 mg/m ³ (Dipotassium tetraborate CAS 1332-77-0)
general population, inhalative, Long-term - local effects, 13.6 mg/m ³ (Dipotassium tetraborate CAS 1332-77-0)
general population, inhalative, Acute - local effects, 13.6 mg/m ³ (Dipotassium tetraborate CAS 1332-77-0)
general population, dermal, Long-term - systemic effects, 185.6 mg/kg bw/d (Dipotassium tetraborate CAS 1332-77-0)

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 tetraborate tetrahydrate, CAS: 12045-78-2
soil, 5.4 mg/kg (Dipotassium tetraborate CAS 1332-77-0)
sewage treatment plants (STP), 10 mg/L (Dipotassium tetraborate CAS 1332-77-0)
seawater, 2.02 mg/L (Dipotassium tetraborate CAS 1332-77-0)
freshwater, 2.02 mg/L (Dipotassium tetraborate CAS 1332-77-0)

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	Respiratory protection mask in the event of high concentrations. Short term: filter apparatus, combination filter A-P2. (DIN EN 14387)
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	characteristic
Odour threshold	No information available.
pH-value	7.5 - 11
pH-value [1%]	not determined
Boiling point [°C]	>105
Flash point [°C]	No information available.
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	0.123 hPa (25°C)
Density [g/cm³]	1.06 - 1.08
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]	<= -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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Date printed 08.03.2023, Revision 08.03.2023

Version 4.0. Supersedes version: 3.0

Page 8 / 14

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 hazard classes as defined in Regulation (EC) No 1272/2008

Acute oral toxicity

Product
ATE-mix, oral, > 300 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 tetraborate tetrahydrate, CAS: 12045-78-2
LD50, oral, Rat, 2500 mg/kg (Dipotassium tetraborate CAS 1332-77-0)

Acute dermal toxicity

Substance
Ethylene glycol, CAS: 107-21-1
LD50, dermal, mouse, > 3500 mg/kg bw
Glycerol, CAS: 56-81-5
LD50, dermal, Rabbit, 1000 mg/kg
Potassium tetraborate tetrahydrate, CAS: 12045-78-2
LD50, dermal, Rabbit, > 2000 mg/kg (Dipotassium tetraborate CAS 1332-77-0)

Acute inhalational toxicity

Substance
Ethylene glycol, CAS: 107-21-1
LC50, inhalative, Rat, > 2.5 mg/L air, 6h
Potassium tetraborate tetrahydrate, CAS: 12045-78-2
LC50, inhalative, Rat, 2.04 mg/L/4h (Dipotassium tetraborate CAS 1332-77-0)

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

Substance
Ethylene glycol, CAS: 107-21-1
Eye, Rabbit, In vivo study, non-irritating
Potassium tetraborate tetrahydrate, CAS: 12045-78-2
(Dipotassium tetraborate CAS 1332-77-0), no adverse effect observed

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Substance
Ethylene glycol, CAS: 107-21-1
dermal, Rabbit, In vivo study, non-irritating
Potassium tetraborate tetrahydrate, CAS: 12045-78-2
(Dipotassium tetraborate CAS 1332-77-0), no adverse effect observed

Respiratory or skin sensitisation

Based on available data, the classification criteria are not met.

Substance
Ethylene glycol, CAS: 107-21-1
dermal, Guinea pig, In vivo study, non-sensitizing



Ferdinand Bilstein GmbH + Co. KG

Date printed 08.03.2023, Revision 08.03.2023

Version 4.0. Supersedes version: 3.0 Page 10 / 14

Potassium tetraborate tetrahydrate, CAS: 12045-78-2
inhalative, (Dipotassium tetraborate CAS 1332-77-0), no adverse effect observed
dermal, (Dipotassium tetraborate CAS 1332-77-0), no adverse effect observed

Specific target organ toxicity — single exposure — Based on available data, the classification criteria are not met.

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, Dog, 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 available information, the classification criteria are not fulfilled.

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

Reproduction toxicity — Based on the available information, the classification criteria are not fulfilled.
Calculation method

- 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 available information, the classification criteria are not 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 available data, the classification criteria are not met.

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.

11.2 Information on other hazards

Endocrine disrupting properties — No information available.

Other information — none

SECTION 12: Ecological information

12.1 Toxicity

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
Glycerol, CAS: 56-81-5
LC50, (96h), Oncorhynchus mykiss, 54000 mg/L
EC50, Activated sludge, > 1000 mg/L
EC50, (72h), Algae, > 2900 mg/L
Potassium tetraborate tetrahydrate, CAS: 12045-78-2
LC50, (96h), fish, 74 mg/L (Dipotassium tetraborate CAS 1332-77-0)
LC50, (48h), Daphnia magna, 133 mg/L (Dipotassium tetraborate CAS 1332-77-0)
EC50, (72h), Algae, 40 - 66 mg/L (Dipotassium tetraborate CAS 1332-77-0)

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.

12.6 Endocrine disrupting properties

No information available.

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

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

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

Waste no. (recommended) 160114*

Contaminated packaging

Uncontaminated packaging may be taken for recycling.

Waste no. (recommended) 150110* packaging containing residues of or contaminated by hazardous substances

SECTION 14: Transport information

14.1 UN number or ID 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

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"

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

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Date printed 08.03.2023, Revision 08.03.2023

Version 4.0. Supersedes version: 3.0 Page 13 / 14

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

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

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EEC-REGULATIONS 2008/98/EC 2000/532/EC; 2010/75/EU; 2004/42/EC; (EC) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EEC ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 517/2014

TRANSPORT-REGULATIONS ADR (2023); IMDG-Code (2023, 41. Amdt.); IATA-DGR (2023)

NATIONAL REGULATIONS (GB): EH40/2005 Workplace exposure limits (Second edition, published December 2011); UK REACH; GB CLP.

- Observe employment restrictions for people Observe employment restrictions for young people.
Observe employment restrictions for mothers-to-be and nursing mothers.
Observe employment restrictions for women of child-bearing age.

- VOC (2010/75/CE) 0 %

15.2 Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

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:

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
 ATE = acute toxicity estimate
 CAS = Chemical Abstracts Service
 CLP = Classification, Labelling and Packaging
 DMEL = Derived Minimum Effect Level
 DNEL = Derived No Effect Level
 EC50 = Median effective concentration
 ECB = European Chemicals Bureau
 EEC = European Economic Community
 EINECS = European Inventory of Existing Commercial Chemical Substances
 EL50 = Median effective loading
 ELINCS = European List of Notified Chemical Substances
 EmS = Emergency Schedules
 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
 IUCLID = International Uniform Chemical Information Database
 IVIS = In vitro irritation score
 LC50 = Lethal concentration, 50%
 LD50 = Median lethal dose
 LC0 = lethal concentration, 0%
 LOAEL = lowest-observed-adverse-effect level
 LL50 = Median lethal loading
 LQ = Limited Quantities
 MARPOL = International Convention for the Prevention of Marine Pollution from Ships
 NOAEL = No Observed Adverse Effect Level
 NOEC = No Observed Effect Concentration
 PBT = Persistent, Bioaccumulative and Toxic substance
 PNEC = Predicted No-Effect Concentration
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
 STP = Sewage Treatment Plant
 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 if swallowed. (kidneys) (Calculation method)

Modified position

SECTION 3 been added: Potassium tetraborate tetrahydrate
 SECTION 3 been added: Glycerol
 SECTION 3 deleted: Sodium 2-ethylhexanoate