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

1.1 Product identifier

febi 172009 antifreeze Ready Mix G12+ (-35°C)
Article number: 172009, 172010, 172011

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 (EC) No 1272/2008]

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 no 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

Product-type:

3.2 The product is a mixture.

Range [%]	Substance
40 - 50	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
< 3	Sodium 2-ethylhexanoate
	CAS: 19766-89-3, EINECS/ELINCS: 243-283-8
	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 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 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 alkalies.
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 (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/m³, Vapour, particulate: 10 mg/m³
Short-term exposure (15-minute): 40 ppm, 104 mg/m³

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/m³, H
Short-term (15-minute): 40 ppm, 104 mg/m³

DNEL

Substance
Ethylene glycol, CAS: 107-21-1
Industrial, dermal, Long-term - systemic effects: 106 mg/m³.
Industrial, inhalative, Long-term - local effects: 35 mg/m³.
general population, dermal, Long-term - systemic effects: 53 mg/m³.
general population, inhalative, Long-term - local effects: 7 mg/m³.

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.

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

Form	liquid
Color	Purple
Odor	characteristic
Odour threshold	No information available.
pH-value	7,5 - 11
pH-value [1%]	not determined
Boiling point [°C]	>107
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/ml]	1,05 - 1,07
Bulk density [kg/m³]	not applicable
Solubility in water	miscible
Partition coefficient [n-octanol/water]	No information available.
Viscosity	No information available.
Relative vapour density determined in air	No information available.
Evaporation speed	No information available.
Melting point [°C]	-35
Autoignition temperature [°C]	440
Decomposition temperature [°C]	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.

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 toxicity

Product
ATE-mix, oral, > 300 mg/kg bw.

Substance
Sodium 2-ethylhexanoate, CAS: 19766-89-3
LD50, dermal, Rat: >2000 mg/kg bw (OECD 402).
LD50, oral, Rat: 2043 mg/kg bw (OECD 401).
LC0, inhalative, Rat: 0,11 mg/l air (OECD 403).
Ethylene glycol, CAS: 107-21-1
LD50, dermal, mouse: > 3500 mg/kg.
LD50, oral, Rat: 7712 mg/kg.
LC50, inhalative, Rat: > 2,5 mg/l 6h.
LDLo, oral, Human: ca. 1600 mg/kg.

Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met.
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
Mutagenicity	Based on the available information, the classification criteria are not fulfilled.
Reproduction toxicity	(CAS: 19766-89-3): This product contains one or more substances of categorie Repr. 2 (CLP). Based on the available information, the classification criteria are not fulfilled. Calculation method
Carcinogenicity	Based on the available information, the classification criteria are not fulfilled.
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.

SECTION 12: Ecological information

12.1 Toxicity

Substance
Sodium 2-ethylhexanoate, CAS: 19766-89-3
LC50, (96h), Oryzias latipes: >100 mg/l (OECD 203).
EC50, (72h), Desmodesmus subspicatus: 49,3 mg/l.
NOEC, (21d), Daphnia magna: 25 mg/l (OECD 211).
EC0, (48h), Daphnia magna: 62,5 mg/l (Directive 79/831/EEC, Annex V, Part C).
Ethylene glycol, CAS: 107-21-1
LC50, (96h), Pimephales promelas: 72 860 mg/l.
EC50, (96h), Selenastrum capricornutum: 6500 - 13000 mg/l.
EC50, (48h), Daphnia magna: > 100 mg/l OECD 202.

12.2 Persistence and degradability

Behaviour in environment compartments	not determined
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 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*

SECTION 14: Transport information

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

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

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 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

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) 2015/830; (EU) 2016/131; (EU) 517/2014
TRANSPORT-REGULATIONS	ADR (2019); IMDG-Code (2019, 39. Amdt.); IATA-DGR (2020)
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011).
- 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 03)

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
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	none