

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date: 24.02.2020

**Version number 5

Revision: 21.02.2020

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

1.1 Product identifier

Trade name: **Liebherr Antifreeze Mix**

Application / Use: Radiator protecting medium

Article number:

Set-number MSDS:

18016, 21016

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Application of the substance / the preparation: Coolant

Uses advised against: No further relevant information available.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

LIEBHERR-LOGISTICS GmbH

St. Vitus 1

DE - 88457 Kirchdorf an der Iller

LIEBHERR-COMPONENTS BIBERACH GmbH

Hans-Liebherr-Strasse 45

DE - 88400 Biberach an der Riß

LIEBHERR-WERK BIBERACH GmbH

Memminger Straße 120

DE - 88400 Biberach an der Riß

LIEBHERR-WERK EHINGEN GmbH

Dr.-Hans-Liebherr-Strasse 1

DE - 89584 Ehingen

LIEBHERR-MISCHTECHNIK GmbH

Im Elchgrund 12

DE - 88427 Bad Schussenried

LIEBHERR-MINING EQUIPMENT COLMAR SAS

49 rue Frédéric Hartmann

CS 50038

FR - 68025 Colmar Cedex

LIEBHERR-WERK NENZING GmbH

Dr.-Hans-Liebherr-Strasse 1

AT - 6710 Nenzing

Further information obtainable from:

Liebherr-Lubricant-Hotline: +49 (0) 73 54 / 80-6060

email: lubricants@liebherr.com

1.4 Emergency telephone number:

In case of emergency ONLY: During working hours (CET): + 49 (0) 73 54 / 80-6060

Emergency response (24 hours) CHEMTREC: +1-703-527-3887 / +1-703-741-5970

+(44)-870-8200418 (United Kingdom)

+(44)-203-8073798 (United Kingdom)

+(31)-858880596 (Netherlands)

+(61)-290372994 (Australia)

0-800-983-611 (within South Africa)

1-800-424-9300 (within USA & Canada)

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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute Tox. 4 H302 Harmful if swallowed.

STOT RE 2 H373 May cause damage to the kidneys through prolonged or repeated exposure. Route of exposure: Oral.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS07 GHS08

Signal word Warning

Hazard-determining components of labelling:

Ethanediol

Hazard statements

H302 Harmful if swallowed.

H373 May cause damage to the kidneys through prolonged or repeated exposure. Route of exposure: Oral.

Precautionary statements

P260 Do not breathe mist/vapours/spray.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P330 Rinse mouth.

P314 Get medical advice/attention if you feel unwell.

P501 Dispose of contents/container in accordance with local regulations.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixture

Description: Mixture

Dangerous components:

CAS: 107-21-1 EINECS: 203-473-3 Reg.nr.: 01-2119456816-28	Ethanediol	STOT RE 2, H373; Acute Tox. 4, H302	25-50%
CAS: 19766-89-3 EINECS: 243-283-8	Sodium 2-ethylhexanoate	Repr. 2, H361	≤2.5%
CAS: 12179-04-3 EINECS: 215-540-4 Reg.nr.: 01-2119490790-32	Disodium tetraborate pentahydrate, borax pentahydrate	Repr. 1B, H360FD; Eye Irrit. 2, H319	≤0.5%

SVHC

12179-04-3 Disodium tetraborate pentahydrate, borax pentahydrate

Additional information:

The wording of the hazard symbols and H-phrases is specified in section 16 if dangerous ingredients are mentioned.

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Components with threshold limit values are mentioned at section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Take affected persons out into the fresh air.

Position and transport stably in side position.

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

Seek medical treatment.

Rinse out mouth and then drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed: No further relevant information available.

Information for doctor: Treat symptomatically.

4.3 Indication of any immediate medical attention and special treatment needed: No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Water spray

Alcohol resistant foam

For safety reasons unsuitable extinguishing agents: Do not use water with full jet.

5.2 Special hazards arising from the substance or mixture:

In case of fire, the following can be released:

Carbon dioxide (CO₂)

Carbon monoxide (CO)

5.3 Advice for firefighters

Protective equipment:

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

Wear fully protective suit.

Additional information: Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Particular danger of slipping on leaked/spilled product.

Wear protective clothing.

6.2 Environmental precautions:

Do not allow to enter sewers, surface or ground water.

Prevent from spreading (e.g. by damming-in or oil barriers).

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

Dispose of the material collected according to regulations.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.

Handling: When handling product in drums use safety footwear and suitable tools. At work please do not eat, drink or smoke.

Information about fire - and explosion protection: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles:

Store only in the original receptacle.
Provide floor trough without outlet.
Prevent any seepage into the ground.
Use only receptacles specifically permitted for this substance/product.

Information about storage in one common storage facility:

Store away from foodstuffs.
Store away from oxidising agents.

Further information about storage conditions:

Recommended storage temperature: 5 to 40 °C
The storage in galvanized containers is not recommended.
Do not store below freezing point (for pour point see section 9 MSDS).

Shelf life from date of dispatch: 3 years (at proper storage)

7.3 Specific end use(s): For more information see technical information.

SECTION 8: Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see section 7.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

107-21-1 Ethanediol (25-50%)

WEL (Great Britain)	Short-term value: 104** mg/m ³ , 40** ppm Long-term value: 10* 52** mg/m ³ , 20** ppm Sk *particulate **vapour
IOELV (EU)	Short-term value: 104 mg/m ³ , 40 ppm Long-term value: 52 mg/m ³ , 20 ppm Skin

Additional Occupational Exposure Limit Values for possible hazards during processing: None

Additional information:

The lists valid during the making were used as basis.
If formation of steam, mist or aerosols take place the concentration in the air has to be kept at the lowest possible level.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Store protective clothing separately.

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Do not inhale gases / fumes / aerosols.

Respiratory protection:

No respiratory protection is ordinarily required under normal conditions of use. Select a filter suitable for combined particulate/ gases and organic vapours (boiling point > 65 ° C, AP2, EN 14387), if exposure limit is exceeded or when aerosol or mist is formed.

Protection of hands:

Protective gloves

Safety gloves of nitrile rubber or viton.

Preventive skin protection by use of skin-protecting agents is recommended.

Material of gloves

Fluorocarbon rubber (Viton)

Nitrile rubber, NBR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Value for the permeation: Level = 6 (480 min)

Eye protection:

Tightly sealed goggles

Body protection: Protective work clothing.**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Fluid
Colour:	Blue-green
Odour:	Mild
Odour threshold:	Not determined.

pH-value: Not determined.**Change in condition**

Melting point/freezing point:	Not determined.
Initial boiling point and boiling range:	> 100 °C (DIN ISO 3405)
Drip point:	Not determined.
Pour point:	~ -38 °C (DIN ISO 3016)

Flash point: Not applicable.**Flammability (solid, gas):** Not applicable.**Ignition temperature:** Not determined.**Decomposition temperature:** Not determined.**Auto-ignition temperature:** Product is not selfigniting.

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Explosive properties:	Not determined.
Explosion limits:	
Lower:	3.0 Vol % (CAS 107-21-1)
Upper:	15.0 Vol % (CAS 107-21-1)
Vapour pressure:	Not determined.
Density at 20 °C:	~ 1.07 g/cm ³ (DIN 51 757)
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with water:	Fully miscible.
Partition coefficient: n-octanol/water:	Not determined.
Viscosity:	
Kinematic at 20 °C:	~ 4 mm ² /s (DIN 51 562)
9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity See 10.2 to 10.6

10.2 Chemical stability: Stable at normal conditions.

Thermal decomposition / conditions to be avoided: Avoid extreme temperatures and direct sunlight.

10.3 Possibility of hazardous reactions: Reacts with strong oxidising agents.

10.4 Conditions to avoid No specific data available.

10.5 Incompatible materials: No further relevant information available.

10.6 Hazardous decomposition products: No dangerous decomposition products known.

Additional information: Product is not classified as inflammable but can burn.

SECTION 11: Toxicological information

11.1 Information on toxicological effects These statements are based on data for components of the material or for similar materials.

Acute toxicity

Harmful if swallowed.

LD/LC50 values relevant for classification:

107-21-1 Ethanediol

Oral	LD50	1,600 mg/kg (human)
	ATE	500 mg/kg (human)
Dermal	LD50	10,600 mg/kg (rabbit)
		lit.

19766-89-3 Sodium 2-ethylhexanoate

Oral	LD50	2,043 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)

Primary irritant effect:

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/irritation Based on available data, the classification criteria are not met.

by inhalation: No irritant effect expected.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

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Other information (about experimental toxicology): Ethandiol has proven to be teratogenic when administered in high doses during animal experiments.**Additional toxicological information:**

Acute Tox. 4 (O)

STOT RE 2

Repeated dose toxicity

Ethandiol:

Oral: the substance can cause damage to the kidneys upon repeated absorption.

Dermal: the substance can cause major damage to the kidneys upon repeated absorption.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

The product contains one or more substances of the following category:

Repr. 2 (EU-CLP): CAS 19766-89-3

Repr. 1B (EU-CLP): CAS 12179-04-3

Germ cell mutagenicity Based on available data, the classification criteria are not met.**Carcinogenicity** Based on available data, the classification criteria are not met.**Reproductive toxicity** Based on available data, the classification criteria are not met.**STOT-single exposure** Based on available data, the classification criteria are not met.**STOT-repeated exposure**

May cause damage to the kidneys through prolonged or repeated exposure. Route of exposure: Oral.

Aspiration hazard Based on available data, the classification criteria are not met.**SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:****107-21-1 Ethandiol**

EC50/48h >100 mg/l (Daphnia magna)

EC50/72h >100 mg/l (seaweed)

LC50/96h >100 mg/l (Leuciscus idus)

19766-89-3 Sodium 2-ethylhexanoate

EC50/48h >100 mg/l (Daphnia magna) (OECD 202)

12.2 Persistence and degradability The product is biodegradable.**Other information:**

Details for elimination:

Test method: OECD 301 A

Method of analysis: reduction of DOC

Elimination grade: > 70%

12.3 Bioaccumulative potential No further relevant information available.**12.4 Mobility in soil** No further relevant information available.**Additional ecological information:****General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow product to reach ground water, water course or sewage system.

12.5 Results of PBT and vPvB assessment**PBT:** Not applicable.**vPvB:** Not applicable.**12.6 Other adverse effects:** No further relevant information available.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact waste processors for recycling information.

European waste catalogue	
16 01 14*	antifreeze fluids containing hazardous substances
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP6	Acute Toxicity

Uncleaned packaging: Empty packing completely. Handover to authorized disposal company.

Recommendation:

Disposal must be made according to official regulations.

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Recommended cleansing agents: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

14.1 UN-Number ADR, ADN, IMDG, IATA	Void
14.2 UN proper shipping name ADR, ADN, IMDG, IATA	Void
14.3 Transport hazard class(es) ADR, ADN, IMDG, IATA Class	Void
14.4 Packing group ADR, IMDG, IATA	Void
14.5 Environmental hazards: Marine pollutant:	No
14.6 Special precautions for user	Not applicable.
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
UN "Model Regulation":	Void

SECTION 15: Regulatory information

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

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

National regulations:

Information about limitation of use:

Employment restrictions concerning juveniles must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

Waterhazard class: Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

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Other regulations, limitations and prohibitive regulations

Substances of very high concern (SVHC) according to REACH, Article 57

12179-04-3	Disodium tetraborate pentahydrate, borax pentahydrate
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15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

* SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H302 Harmful if swallowed.

H319 Causes serious eye irritation.

H360FD May damage fertility. May damage the unborn child.

H361 Suspected of damaging fertility or the unborn child.

H373 May cause damage to the kidneys through prolonged or repeated exposure. Route of exposure: Oral.

Department issuing SDS: Liebherr Lubricants

Contact:

Liebherr-Lubricant-Hotline: +49 (0) 73 54 / 80-6060

E-mail: lubricants@liebherr.com

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

PBT: Persistent, Bioaccumulative and Toxic

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity - oral - Category 4

Eye Irrit. 2: Serious eye damage/eye irritation - Category 2

Repr. 1B: Reproductive toxicity - Category 1B

Repr. 2: Reproductive toxicity - Category 2

STOT RE 2: Specific target organ toxicity (repeated exposure) - Category 2

*** Data compared to the previous version altered.******Information about the version number:** Replaces all previous versions.