

Page 1 of 14
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 02.08.2019 / 0011
Replacing version dated / version: 22.02.2019 / 0010
Valid from: 02.08.2019
PDF print date: 05.08.2019
Kuehlerfrostschutz KFS 11 1 L
Art.: 21149

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

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

1.1 Product identifier

Kuehlerfrostschutz KFS 11 1 L
Art.: 21149

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

Relevant identified uses of the substance or mixture:

Anti-freeze

Sector of use [SU]:

SU 3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

SU21 - Consumer uses: Private households (=general public = consumers)

SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Chemical product category [PC]:

PC 4 - Anti-Freeze and de-icing products

PC16 - Heat transfer fluids

Process category [PROC]:

PROC 2 - Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC 8a - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC 8b - Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC 9 - Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC19 - Manual activities involving hand contact

PROC20 - Use of functional fluids in small devices

Environmental Release Category [ERC]:

ERC 4 - Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC 7 - Use of functional fluid at industrial site

ERC 9a - Widespread use of functional fluid (indoor)

ERC 9b - Widespread use of functional fluid (outdoor)

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

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LIQUI MOLY GmbH, Jerg-Wieland-Str. 4, 89081 Ulm-Lehr, Germany

Phone:(+49) 0731-1420-0, Fax:(+49) 0731-1420-88

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

1.4 Emergency telephone number

Emergency information services / official advisory body:

Telephone number of the company in case of emergencies:

+49 (0) 700 / 24 112 112 (LMR)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (CLP)

Hazard class	Hazard category	Hazard statement
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Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 02.08.2019 / 0011
 Replacing version dated / version: 22.02.2019 / 0010
 Valid from: 02.08.2019
 PDF print date: 05.08.2019
 Kuehlerfrostschutz KFS 11 1 L
 Art.: 21149

Acute Tox.	4	H302-Harmful if swallowed.
STOT RE	2	H373-May cause damage to organs through prolonged or repeated exposure (kidneys).

2.2 Label elements

Labeling according to Regulation (EC) 1272/2008 (CLP)



Warning

H302-Harmful if swallowed. H373-May cause damage to organs through prolonged or repeated exposure (kidneys).

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 or spray. P270-Do not eat, drink or smoke when using this product.
 P314-Get medical advice / attention if you feel unwell.
 P501-Dispose of contents / container to an approved waste disposal facility.

Ethanediol

2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
 The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

SECTION 3: Composition/information on ingredients

3.1 Substance

n.a.

3.2 Mixture

Ethanediol	Substance for which an EU exposure limit value applies.
Registration number (REACH)	01-2119456816-28-XXXX
Index	603-027-00-1
EINECS, ELINCS, NLP	203-473-3
CAS	107-21-1
content %	80-98
Classification according to Regulation (EC) 1272/2008 (CLP)	Acute Tox. 4, H302 STOT RE 2, H373 (kidneys)

Sodium benzoate	
Registration number (REACH)	01-2119460683-35-XXXX
Index	---
EINECS, ELINCS, NLP	208-534-8
CAS	532-32-1
content %	1-5
Classification according to Regulation (EC) 1272/2008 (CLP)	Eye Irrit. 2, H319

Page 3 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 02.08.2019 / 0011
 Replacing version dated / version: 22.02.2019 / 0010
 Valid from: 02.08.2019
 PDF print date: 05.08.2019
 Kuehlerfrostschutz KFS 11 1 L
 Art.: 21149

Disodium tetraborate pentahydrate	SVHC-substance
Registration number (REACH)	01-2119490790-32-XXXX
Index	005-011-02-9
EINECS, ELINCS, NLP	215-540-4
CAS	12179-04-3
content %	0,1-<3
Classification according to Regulation (EC) 1272/2008 (CLP)	Eye Irrit. 2, H319 Repr. 1B, H360FD

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.
 The substances named in this section are given with their actual, appropriate classification!
 For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aiders should ensure they are protected!
 Never pour anything into the mouth of an unconscious person!

Inhalation

Remove person from danger area.
 Supply person with fresh air and consult doctor according to symptoms.

Skin contact

Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

Eye contact

Remove contact lenses.
 Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

Ingestion

Rinse the mouth thoroughly with water.
 Do not induce vomiting - give copious water to drink. Consult doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.
 In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.
 effects/damages the central nervous system

unconsciousness
 liver and kidney damage

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.
 Antidote:
 None known

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water jet spray / alcohol resistant foam / CO₂ / dry extinguisher.

Unsuitable extinguishing media

None known

5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:
 Oxides of carbon
 Aldehydes
 Ketones
 Explosive vapour/air or gas/air mixtures.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
 Protective respirator with independent air supply.

GB

Page 4 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 02.08.2019 / 0011
 Replacing version dated / version: 22.02.2019 / 0010
 Valid from: 02.08.2019
 PDF print date: 05.08.2019
 Kuehlerfrostschutz KFS 11 1 L
 Art.: 21149

According to size of fire
 Full protection, if necessary.
 Cool container at risk with water.
 Dispose of contaminated extinction water according to official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure sufficient supply of air.
 Remove possible causes of ignition - do not smoke.
 Avoid contact with eyes or skin.
 If applicable, caution - risk of slipping.

6.2 Environmental precautions

If leakage occurs, dam up.
 Resolve leaks if this possible without risk.
 Prevent from entering drainage system.
 Prevent surface and ground-water infiltration, as well as ground penetration.
 If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth) and dispose of according to Section 13.

6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure good ventilation.
 Avoid contact with eyes or skin.
 Do not heat to temperatures close to flash point.
 Take precautions against electrostatic charges.
 Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
 Observe directions on label and instructions for use.
 Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.
 Wash hands before breaks and at end of work.
 Keep away from food, drink and animal feedingstuffs.
 Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.
 Store product closed and only in original packing.
 Not to be stored in gangways or stair wells.
 Store in a dry place.
 Store cool.
 Earth devices.

7.3 Specific end use(s)

No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Chemical Name	Ethanediol	Content %:80-98
WEL-TWA: 10 mg/m ³ (particulate), 52 mg/m ³ (vapour) (WEL), 20 ppm (52 mg/m ³) (EU)	WEL-STEL: 104 mg/m ³ (vapour) (WEL), 40 ppm (104 mg/m ³) (EU)	---

GB

Page 5 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 02.08.2019 / 0011
 Replacing version dated / version: 22.02.2019 / 0010
 Valid from: 02.08.2019
 PDF print date: 05.08.2019
 Kuehlerfrostschutz KFS 11 1 L
 Art.: 21149

Monitoring procedures:	<ul style="list-style-type: none"> - Compur - KITA-232 SA (502 342) - Compur - KITA-232 SB (550 267) - Draeger - Ethylene Glycol 10 (5) (81 01 351) - NIOSH 5523 (Glycols) - 1996 - OSHA PV2024 (Ethylene glycol) - 1999 - EU project BC/CEN/ENTR/000/2002-16 card 11-2 (2004) - Draeger - Alcohol 100/a (CH 29 701)
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BMGV: ---	Other information: Sk (particulate, vapour)
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Chemical Name	Disodium tetraborate pentahydrate		Content %:0,1-<3
WEL-TWA: 1 mg/m3	WEL-STEL: ---	---	
Monitoring procedures:	---		
BMGV: ---	Other information: ---		

Ethanediol						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - soil		PNEC	1,53	mg/kg	
	Environment - sewage treatment plant		PNEC	199,5	mg/l	
	Environment - marine		PNEC	1	mg/l	
	Environment - sediment, marine		PNEC	3,7	mg/kg	
	Environment - sediment, freshwater		PNEC	37	mg/kg	
	Environment - freshwater		PNEC	10	mg/l	
Consumer	Human - inhalation	Short term, systemic effects	DNEL	7	mg/m3	
Consumer	Human - dermal	Long term, systemic effects	DNEL	53	mg/kg bw/day	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	35	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	106	mg/kg bw/day	

Sodium benzoate						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,13	mg/l	
	Environment - marine		PNEC	0,013	mg/l	
	Environment - sporadic (intermittent) release		PNEC	0,305	mg/l	
	Environment - sewage treatment plant		PNEC	10	mg/l	
	Environment - sediment, freshwater		PNEC	1,76	mg/kg dw	
	Environment - sediment, marine		PNEC	0,176	mg/kg dw	
	Environment - soil		PNEC	0,276	mg/kg dw	
	Environment - oral (animal feed)		PNEC	300	mg/kg feed	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	1,5	mg/m3	
Consumer	Human - inhalation	Long term, local effects	DNEL	0,06	mg/m3	
Consumer	Human - dermal	Long term, systemic effects	DNEL	31,25	mg/kg bw/d	
Consumer	Human - oral		DNEL	16,6	mg/kg bw/d	

GB

Page 6 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 02.08.2019 / 0011
 Replacing version dated / version: 22.02.2019 / 0010
 Valid from: 02.08.2019
 PDF print date: 05.08.2019
 Kuehlerfrostschutz KFS 11 1 L
 Art.: 21149

Workers / employees	Human - dermal	Short term, systemic effects	DNEL	34,7	mg/kg body weight/day	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	10,4	mg/kg	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	62,5	mg/kg bw/d	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	3	mg/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	0,1	mg/m3	

Disodium tetraborate pentahydrate						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - sporadic (intermittent) release		PNEC	13,7	mg/l	
	Environment - freshwater		PNEC	2,9	mg/l	
	Environment - marine		PNEC	2,9	mg/l	
	Environment - sewage treatment plant		PNEC	10	mg/l	
	Environment - soil		PNEC	5,7	mg/kg	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,79	mg/kg bw/day	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	3,4	mg/m3	
Consumer	Human - dermal	Long term, systemic effects	DNEL	159,5	mg/kg bw/day	
Consumer	Human - oral	Short term, systemic effects	DNEL	0,79	mg/kg	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	6,7	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	316,4	mg/kg bw/day	

WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).
 (8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).
 (8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
 ** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.

If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.

Applies only if maximum permissible exposure values are listed here.

Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.

These are specified by e.g. BS EN 14042.

BS EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Page 7 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 02.08.2019 / 0011
 Replacing version dated / version: 22.02.2019 / 0010
 Valid from: 02.08.2019
 PDF print date: 05.08.2019
 Kuehlerfrostschutz KFS 11 1 L
 Art.: 21149

Eye/face protection:
 Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:
 Chemical resistant protective gloves (EN 374).
 Recommended
 Protective gloves in butyl rubber (EN 374).
 Protective Neoprene® / polychloroprene gloves (EN 374).
 Protective nitrile gloves (EN 374).
 Protective Viton® / fluoroelastomer gloves (EN 374)
 Minimum layer thickness in mm:
 0,38
 Permeation time (penetration time) in minutes:
 >= 480
 The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.
 The recommended maximum wearing time is 50% of breakthrough time.
 Protective hand cream recommended.

Skin protection - Other:
 Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:
 If OES or MEL is exceeded.
 Filter A2 P2 (EN 14387), code colour brown, white
 Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:
 Not applicable

Additional information on hand protection - No tests have been performed.
 In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.
 Selection of materials derived from glove manufacturer's indications.
 Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.
 Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
 In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.
 The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

8.2.3 Environmental exposure controls

No information available at present.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	Cyan
Odour:	Mild
Odour threshold:	Not determined
pH-value:	7,2 (20°C)
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	180 °C
Flash point:	~122 °C (Pensky-Martens, closed cup)
Evaporation rate:	Not determined
Flammability (solid, gas):	n.a.
Lower explosive limit:	Not determined
Upper explosive limit:	Not determined
Vapour pressure:	<0,01 mmHg (37,8°C)
Vapour density (air = 1):	Not determined
Density:	1,125 kg/l (20°C)
Bulk density:	n.a.
Solubility(ies):	Mixable

Page 8 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 02.08.2019 / 0011
 Replacing version dated / version: 22.02.2019 / 0010
 Valid from: 02.08.2019
 PDF print date: 05.08.2019
 Kuehlerfrostschutz KFS 11 1 L
 Art.: 21149

Water solubility:	Soluble
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	Not determined
Explosive properties:	Product is not explosive.
Oxidising properties:	No

9.2 Other information

Miscibility:	Not determined
Fat solubility / solvent:	Not determined
Conductivity:	Not determined
Surface tension:	Not determined
Solvents content:	Not determined

SECTION 10: Stability and reactivity

10.1 Reactivity

The product has not been tested.

10.2 Chemical stability

Stable with proper storage and handling.

10.3 Possibility of hazardous reactions

No dangerous reactions are known.

10.4 Conditions to avoid

Strong heat
 Protect from humidity.
 Product is hygroscopic.

10.5 Incompatible materials

Oxidizing agents
 Acids
 Chlorates
 Nitrates
 Peroxides

10.6 Hazardous decomposition products

See also section 5.2
 No decomposition when used as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Possibly more information on health effects, see Section 2.1 (classification).

Kuehlerfrostschutz KFS 11 1 L

Art.: 21149

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	ATE	1716	mg/kg			calculated value
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.
Aspiration hazard:						n.d.a.

GB

Page 9 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 02.08.2019 / 0011
 Replacing version dated / version: 22.02.2019 / 0010
 Valid from: 02.08.2019
 PDF print date: 05.08.2019
 Kuehlerfrostschutz KFS 11 1 L
 Art.: 21149

Symptoms:						drowsiness, headaches, drowsiness, nausea, mental confusion, cramps, vomiting, lower abdominal pain
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Ethanediol						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2000	mg/kg	Rat	IUCLID Chem. Data Sheet (ESIS)	Does not conform with EU classification.
Acute toxicity, by oral route:	LD50	1600	mg/kg	Cat		
Acute toxicity, by dermal route:	LD50	9530	mg/kg	Rabbit		
Skin corrosion/irritation:				Rabbit		Not irritant
Serious eye damage/irritation:				Rabbit		Slightly irritant
Respiratory or skin sensitisation:				Human being	(Patch-Test)	Negative
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Symptoms:						ataxia, breathing difficulties, unconsciousness, cramps, fatigue

Sodium benzoate						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2000	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rat		
Acute toxicity, by inhalation:	LC50	>12,2	mg/l	Rat		Aerosol
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Irrit. 2
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Carcinogenicity:	NOAEL	>1000	mg/kg bw/d	Rat		
Reproductive toxicity:	NOAEL	>=175	mg/kg bw/d	Rat		
Specific target organ toxicity - repeated exposure (STOT-RE):	NOAEL	1000	mg/kg bw/d	Rat		
Symptoms:						diarrhoea, fever, headaches, gastrointestinal disturbances, nausea and vomiting.

Disodium tetraborate pentahydrate						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	3200-3400	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rabbit		
Acute toxicity, by inhalation:	LC50	>2	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	
Skin corrosion/irritation:				Rabbit		Not irritant, Analogous conclusion
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Mild irritant

Page 10 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 02.08.2019 / 0011
 Replacing version dated / version: 22.02.2019 / 0010
 Valid from: 02.08.2019
 PDF print date: 05.08.2019
 Kuehlerfrostschutz KFS 11 1 L
 Art.: 21149

Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Not sensitizing
Carcinogenicity:				Mouse	OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)	No indications of such an effect., Analogous conclusion
Reproductive toxicity:				Rat		Repr. 1B, Analogous conclusion
Symptoms:						breathing difficulties, headaches, gastrointestinal disturbances, dizziness, nausea

SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

Kuehlerfrostschutz KFS 11 1 L Art.: 21149

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to daphnia:							n.d.a.
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and degradability:							n.d.a.
12.3. Bioaccumulative potential:							n.d.a.
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT and vPvB assessment							n.d.a.
12.6. Other adverse effects:							n.d.a.

Ethanediol

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.2. Persistence and degradability:		28d	56	%		OECD 301 C (Ready Biodegradability - Modified MITI Test (I))	
12.3. Bioaccumulative potential:	Log Pow		-1,36				Not to be expected
12.1. Toxicity to fish:	LC50	96h	>10000	mg/l	Pimephales promelas	IUCLID Chem. Data Sheet (ESIS)	
12.1. Toxicity to daphnia:	EC50	48h	41100	mg/l	Daphnia magna		
12.1. Toxicity to algae:	EC50	96h	6500-7500	mg/l	Pseudokirchneriella subcapitata		
Toxicity to bacteria:	EC50	16h	>10000	mg/l	Pseudomonas putida	IUCLID Chem. Data Sheet (ESIS)	
Other information:	BOD5		0,78	g/g			IUCLID
Other information:	COD		1,19	g/g			IUCLID
Other information:	ThOD		1,29	g/g			IUCLID

Sodium benzoate

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
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Page 11 of 14
 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 02.08.2019 / 0011
 Replacing version dated / version: 22.02.2019 / 0010
 Valid from: 02.08.2019
 PDF print date: 05.08.2019
 Kuehlerfrostschutz KFS 11 1 L
 Art.: 21149

12.3. Bioaccumulative potential:	Log Pow		1,88				A notable biological accumulation potential is not to be expected (LogPow 1-3).
12.1. Toxicity to algae:	EC50	72h	>100	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to fish:	EC50	96h	>100	g/l	Pimephales promelas	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EC50	96h	>100	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	IC50	72h	>30,5	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	90	%		OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Readily biodegradable
12.4. Mobility in soil:	Log Kow		-2,27				
Toxicity to bacteria:	EC0		1000	mg/l			

Disodium tetraborate pentahydrate

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	NOEC/NOEL	96h	13	mg/l	Brachydanio rerio		
12.1. Toxicity to fish:	LC50	96h	74	mg/l	Limanda limanda		Analogous conclusion
12.1. Toxicity to daphnia:	EC50	48h	133	mg/l	Daphnia magna		Analogous conclusion
12.1. Toxicity to algae:	NOEC/NOEL	10d	50	mg/l			
12.3. Bioaccumulative potential:	BCF		121				Analogous conclusion

SECTION 13: Disposal considerations

13.1 Waste treatment methods

For the substance / mixture / residual amounts

EC disposal code no.:

The waste codes are recommendations based on the scheduled use of this product. Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)

16 01 14 antifreeze fluids containing hazardous substances

Recommendation:

Sewage disposal shall be discouraged.

Pay attention to local and national official regulations.

E.g. suitable incineration plant.

E.g. dispose at suitable refuse site.

For contaminated packing material

Pay attention to local and national official regulations.

Empty container completely.

Uncontaminated packaging can be recycled.

Dispose of packaging that cannot be cleaned in the same manner as the substance.

Do not perforate, cut up or weld uncleaned container.

Residues may present a risk of explosion.

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 02.08.2019 / 0011
 Replacing version dated / version: 22.02.2019 / 0010
 Valid from: 02.08.2019
 PDF print date: 05.08.2019
 Kuehlerfrostschutz KFS 11 1 L
 Art.: 21149

SECTION 14: Transport information

General statements

14.1. UN number: n.a.
Transport by road/by rail (ADR/RID)
 14.2. UN proper shipping name:
 14.3. Transport hazard class(es): n.a.
 14.4. Packing group: n.a.
 Classification code: n.a.
 LQ: n.a.
 14.5. Environmental hazards: Not applicable
 Tunnel restriction code:

Transport by sea (IMDG-code)

14.2. UN proper shipping name:
 14.3. Transport hazard class(es): n.a.
 14.4. Packing group: n.a.
 Marine Pollutant: n.a.
 14.5. Environmental hazards: Not applicable

Transport by air (IATA)

14.2. UN proper shipping name:
 14.3. Transport hazard class(es): n.a.
 14.4. Packing group: n.a.
 14.5. Environmental hazards: Not applicable

14.6. Special precautions for user

Unless specified otherwise, general measures for safe transport must be followed.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Non-dangerous material according to Transport Regulations.

SECTION 15: Regulatory information

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

Observe restrictions:

Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)!
 Regulation (EC) No 1907/2006, Annex XVII

Disodium tetraborate pentahydrate

Comply with national regulations/laws governing maternity protection (national implementation of the Directive 92/85/EEC)!

Comply with trade association/occupational health regulations.

Directive 2010/75/EU (VOC): 0 %

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections: 2, 3, 8, 11, 12, 16

These details refer to the product as it is delivered.

Employee instruction/training in handling hazardous materials is required.

Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

Classification in accordance with regulation (EC) No. 1272/2008 (CLP)	Evaluation method used
Acute Tox. 4, H302	Classification based on toxicological analyses.

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
 Revision date / version: 02.08.2019 / 0011
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 Kuehlerfrostschutz KFS 11 1 L
 Art.: 21149

STOT RE 2, H373
Classification according to calculation procedure.

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

H360FD May damage fertility. May damage the unborn child.

H302 Harmful if swallowed.

H319 Causes serious eye irritation.

H373 May cause damage to organs through prolonged or repeated exposure.

Acute Tox. — Acute toxicity - oral

STOT RE — Specific target organ toxicity - repeated exposure

Eye Irrit. — Eye irritation

Repr. — Reproductive toxicity

Any abbreviations and acronyms used in this document:

acc., acc. to according, according to
 ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)
 AOX Adsorbable organic halogen compounds
 approx. approximately
 Art., Art. no. Article number
 ASTM ASTM International (American Society for Testing and Materials)
 BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)
 BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)
 BSEF The International Bromine Council
 bw body weight
 CAS Chemical Abstracts Service
 CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)
 CMR carcinogenic, mutagenic, reproductive toxic
 DMEL Derived Minimum Effect Level
 DNEL Derived No Effect Level
 dw dry weight
 e.g. for example (abbreviation of Latin 'exempli gratia'), for instance
 EC European Community
 ECHA European Chemicals Agency
 EEC European Economic Community
 EINECS European Inventory of Existing Commercial Chemical Substances
 ELINCS European List of Notified Chemical Substances
 EN European Norms
 EPA United States Environmental Protection Agency (United States of America)
 etc. et cetera
 EU European Union
 EVAL Ethylene-vinyl alcohol copolymer
 Fax. Fax number
 gen. general
 GHS Globally Harmonized System of Classification and Labelling of Chemicals
 GWP Global warming potential
 IARC International Agency for Research on Cancer
 IATA International Air Transport Association
 IBC (Code) International Bulk Chemical (Code)
 IMDG-code International Maritime Code for Dangerous Goods
 incl. including, inclusive
 IUCLID International Uniform Chemical Information Database
 LQ Limited Quantities
 MARPOL International Convention for the Prevention of Marine Pollution from Ships
 n.a. not applicable
 n.av. not available
 n.c. not checked

Page 14 of 14
Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 02.08.2019 / 0011
Replacing version dated / version: 22.02.2019 / 0010
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Kuehlerfrostschutz KFS 11 1 L
Art.: 21149

n.d.a. no data available
OECD Organisation for Economic Co-operation and Development
org. organic
PBT persistent, bioaccumulative and toxic
PE Polyethylene
PNEC Predicted No Effect Concentration
ppm parts per million
PVC Polyvinylchloride
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
SVHC Substances of Very High Concern
Tel. Telephone
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VOC Volatile organic compounds
vPvB very persistent and very bioaccumulative
wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.
No responsibility.

These statements were made by:

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