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Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 14.12.2021 / 0005
Replacing version dated / version: 12.02.2020 / 0004
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AG-20 - UF
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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

AG-20 - UF
AG-44 - UF
KF-56 - UF
KF-55 - UF
KF-45 - UF
KF-40 - UF
KF-34 - UF
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1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture:

Flux

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

CHEMET GmbH
Postfach 1209
56419 Wirges
Deutschland
Tel.: +49 (0) 2602 / 9265-0
Fax: +49 (0) 2602 / 9265-25
info@chemet.de
www.chemet.de

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) 2602 / 9265-0 (Mo. - Fr. 7.00h - 16.00h)

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
Acute Tox.	4	H302-Harmful if swallowed.
Repr.	1B	H360FD-May damage fertility. May damage the unborn child.

2.2 Label elements

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



Danger

H302-Harmful if swallowed. H360FD-May damage fertility. May damage the unborn child.

P201-Obtain special instructions before use. P280-Wear protective gloves / protective clothing / eye protection / face protection.
P308+P313-IF exposed or concerned: Get medical advice / attention.

Restricted to professional users.

Potassium difluorodihydroxyborate(1-)

Potassium fluoride

Boric acid

Lithium fluoride

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 %).

The mixture does not contain any substance with endocrine disrupting properties (< 0,1 %).

SECTION 3: Composition/information on ingredients

3.1 Substances

n.a.

3.2 Mixtures

Potassium difluorodihydroxyborate(1-)	
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	286-925-2
CAS	85392-66-1
content %	10-<25
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H302
Dipotassium tetraborate, tetrahydrate	
Registration number (REACH)	---

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EINECS, ELINCS, NLP, REACH-IT List-No.	215-575-5
CAS	12045-78-2
content %	10-<25
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Repr. 2, H361d

methacrylate copolymer	
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	---
CAS	---
content %	5-<10
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Eye Irrit. 2, H319

Lithium fluoride	Substance for which an EU exposure limit value applies.
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	232-152-0
CAS	7789-24-4
content %	1-<5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	EUH032 Acute Tox. 3, H301 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

Boric acid	SVHC-substance
Registration number (REACH)	01-2119486683-25-XXXX
Index	005-007-00-2
EINECS, ELINCS, NLP, REACH-IT List-No.	233-139-2
CAS	10043-35-3
content %	1-<2,5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Repr. 1B, H360FD

Potassium fluoride	Substance for which an EU exposure limit value applies.
Registration number (REACH)	01-2119555273-40-XXXX
Index	009-005-00-2
EINECS, ELINCS, NLP, REACH-IT List-No.	232-151-5
CAS	7789-23-3
content %	1-<2,5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 3, H331 Acute Tox. 3, H311 Acute Tox. 3, H301

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

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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.

In the event of contact with the hot product:

Cool with cold water.
 Cover burns aseptically.

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.
 Consult doctor immediately - keep Data Sheet available.

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.

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water jet spray/foam/CO₂/dry extinguisher

Unsuitable extinguishing media

High volume water jet

5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:

Oxides of carbon
 Metal oxides
 Hydrofluoric acid
 Toxic gases

5.3 Advice for firefighters

For personal protective equipment see Section 8.
 In case of fire and/or explosion do not breathe fumes.
 Protective respirator with independent air supply.
 According to size of fire
 Full protection, if necessary.
 Dispose of contaminated extinction water according to official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.
 Ensure sufficient ventilation, remove sources of ignition.
 Avoid dust formation with solid or powder products.
 Leave the danger zone if possible, use existing emergency plans if necessary.
 Keep unprotected persons away.
 Avoid contact with eyes or skin.

6.1.2 For emergency responders

See section 8 for suitable protective equipment and material specifications.

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

Pick up mechanically and dispose of according to Section 13.

Allow the hot product to solidify.

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.

Pregnant women should avoid contact with this product.

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.

Not to be stored in gangways or stair wells.

Store product closed and only in original packing.

Do not store with alkalis.

Do not store with acids.

Store at room temperature.

Store in a dry place.

7.3 Specific end use(s)

No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

GB	Chemical Name	Lithium fluoride	Content %:1-<5
	WEL-TWA: 2,5 mg/m ³ (fluoride (inorganic,as F) (WEL, EU)		WEL-STEL: --- ---
	Monitoring procedures:	DFG (D) (Fluorwasserstoff und Fluoride), DFG (E) (Hydrogenfluoride and fluorides) - 2005 - NIOSH 7902 (Fluorides, aerosol and gas by ISE) - 1994 NIOSH 7906 (PARTICULATE FLUORIDES and HYDROFLUORIC ACID by Ion Chromatography) - 2014 - OSHA ID-110 (Fluoride (F ⁻ and HF) in workplace atmospheres) - 1991 - EU project BC/CEN/ENTR/000/2002-16 card 95-5 (2004)	

BMGV: ---	Other information: ---
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Chemical Name	Potassium fluoride	Content %:1- <2,5
WEL-TWA: 2,5 mg/m ³ (fluoride (inorganic, as F) (WEL, EU)	WEL-STEL: ---	---
Monitoring procedures:		
<ul style="list-style-type: none"> - DFG (D) (Fluorwasserstoff und Fluoride), DFG (E) (Hydrogenfluoride and fluorides) - 2005 - NIOSH 7902 (Fluorides, aerosol and gas by ISE) - 1994 - NIOSH 7906 (PARTICULATE FLUORIDES and HYDROFLUORIC ACID by Ion Chromatography) - 2014 - OSHA ID-110 (Fluoride (F⁻ and HF) in workplace atmospheres) - 1991 - EU project BC/CEN/ENTR/000/2002-16 card 95-5 (2004) 		
BMGV: ---	Other information: ---	

Boric acid						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	1,35	mg/l	
	Environment - marine		PNEC	1,35	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	9,1	mg/l	
	Environment - sewage treatment plant		PNEC	1,75	mg/l	
	Environment - sediment, freshwater		PNEC	1,8	mg/kg dw	
	Environment - sediment, marine		PNEC	1,8	mg/kg dw	
	Environment - soil		PNEC	5,4	mg/kg dw	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	4,15	mg/m ³	
Consumer	Human - dermal	Long term, systemic effects	DNEL	196	mg/kg bw/day	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,98	mg/kg bw/day	
Consumer	Human - oral	Short term, systemic effects	DNEL	0,98	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	8,3	mg/m ³	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	392	mg/kg bw/day	

Potassium tetrafluoroborate						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	2	mg/l	assessment factor: 50
	Environment - marine		PNEC	0,2	mg/l	assessment factor: 500
Consumer	Human - oral	Long term, systemic effects	DNEL	0,067	mg/kg bw/d	
Consumer	Human - dermal	Long term, systemic effects	DNEL	3,7	mg/kg bw/d	

Consumer	Human - inhalation	Long term, systemic effects	DNEL	0,123	mg/m ³	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	0,496	mg/m ³	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	20,5	mg/kg body weight/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 (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). | 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. (13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (14) = The substance can cause sensitisation of the skin (Directive 2004/37/CE).

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. EN 14042.

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.

Eye/face protection:

Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:

Use acid resistant protective gloves (EN ISO 374).

If applicable

Protective gloves made of butyl (EN ISO 374).

Protective Neoprene® / polychloroprene gloves (EN ISO 374).

Protective nitrile gloves (EN ISO 374).

Minimum layer thickness in mm:

0,5

Permeation time (penetration time) in minutes:

> 240

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.

When dealing with heated material:

If applicable

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Insulating gloves EN 407 (heat).

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 B (EN 14387), code colour grey

Filter E (EN 14387), code colour yellow

Filter P3 (EN 143), code colour white

Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:

If applicable, these are included in the individual protective measures (eye/face protection, skin protection, respiratory protection).

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:	Solid
Colour:	According to specification
Odour:	Slightly
Melting point/freezing point:	There is no information available on this parameter.
Boiling point or initial boiling point and boiling range:	There is no information available on this parameter.
Flammability:	There is no information available on this parameter.
Lower explosion limit:	Does not apply to solids.
Upper explosion limit:	Does not apply to solids.
Flash point:	Does not apply to solids.
Auto-ignition temperature:	Does not apply to solids.
Decomposition temperature:	There is no information available on this parameter.
pH:	There is no information available on this parameter.
Kinematic viscosity:	There is no information available on this parameter.
Solubility:	There is no information available on this parameter.
Partition coefficient n-octanol/water (log value):	Does not apply to mixtures.
Vapour pressure:	There is no information available on this parameter.
Density and/or relative density:	There is no information available on this parameter.
Relative vapour density:	Does not apply to solids.
Particle characteristics:	There is no information available on this parameter.

9.2 Other information

Explosives:	Product is not explosive.
Oxidizing solids:	No

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

None known

10.5 Incompatible materials

Avoid contact with strong alkalis.

Avoid contact with strong oxidizing agents.

Avoid contact with strong acids.

10.6 Hazardous decomposition products

Hydrofluoric acid

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	ATE	1625	mg/kg			calculated value
Acute toxicity, by dermal route:	ATE	>2000	mg/kg			calculated value
Acute toxicity, by inhalation:	ATE	>5	mg/l/4h			calculated value, Dust
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.
Symptoms:						n.d.a.

Potassium difluorodihydroxyborate(1-)

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	744	mg/kg	Rat		
Symptoms:						coughing, mucous membrane irritation, watering eyes

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Dipotassium tetraborate, tetrahydrate						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2500	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rabbit		
Acute toxicity, by inhalation:	LC50	>2	mg/m3	Rat		
Skin corrosion/irritation:				Rabbit		Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Not irritant
Respiratory or skin sensitisation:						Not sensitizing
Symptoms:						abdominal pain, in contact: coughing, vomiting and nausea may occur., breathing difficulties

Lithium fluoride						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	143	mg/kg	Rat		
Symptoms:						respiratory distress, unconsciousness, drop in blood pressure, burning of the membranes of the nose and throat, diarrhoea, annoyance, disturbed heart rhythm, cornea opacity, coughing, headaches, cramps, circulatory collapse, mucous membrane irritation, difficulty swallowing, shock

Boric acid						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>2600	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rabbit		

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Acute toxicity, by inhalation:	LC50	>2	g/m3	Rat		
Skin corrosion/irritation:						Not irritant
Serious eye damage/irritation:						Not irritant
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Not sensitizing
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Reproductive toxicity:						Positive
Aspiration hazard:						Negative
Symptoms:						ataxia, breathing difficulties, diarrhoea, headaches, cramps, gastrointestinal disturbances, fatigue, dizziness, nausea

Potassium fluoride						
Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	245	mg/kg	Rat		
Symptoms:						respiratory distress, unconsciousness, drop in blood pressure, burning of the membranes of the nose and throat, diarrhoea, annoyance, disturbed heart rhythm, cornea opacity, coughing, headaches, cramps, circulatory collapse, mucous membrane irritation, difficulty swallowing, shock

11.2. Information on other hazards

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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Endocrine disrupting properties:						Does not apply to mixtures.
Other information:						No other relevant information available on adverse effects on health.

SECTION 12: Ecological information

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

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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. Endocrine disrupting properties:							Does not apply to mixtures.
12.7. Other adverse effects:							No information available on other adverse effects on the environment.

Potassium difluorodihydroxyborate(1-)

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	0,06	mg/l	Ictalurus punctatus	U.S. EPA ECOTOX Database	

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12.1. Toxicity to fish:	LC50	96h	0,063	mg/l	Lepomis macrochirus	U.S. EPA ECOTOX Database	
12.1. Toxicity to fish:	LC50	96h	750	mg/l	Brachydanio rerio		Analogous conclusion

Dipotassium tetraborate, tetrahydrate							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	280	mg/l	Cyprinus caprio		
12.1. Toxicity to daphnia:	LC50	48h	133	mg/l	Daphnia magna		
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

Boric acid							
Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	>800	mg/l	Oncorhynchus mykiss		
12.1. Toxicity to fish:	NOEC/NOEL	34d	1,8	mg/l	Brachydanio rerio		
12.1. Toxicity to fish:	LC50	96h	5600	mg/l	Gambusia affinis		
12.1. Toxicity to fish:	LC50	96h	79,7	mg/l	Pimephales promelas		EPA OPPTS 850.1075
12.1. Toxicity to daphnia:	EC50	48h	133-875	mg/l	Daphnia magna		
12.1. Toxicity to algae:	IC50	72h	192	mg/l	Scenedesmus subspicatus		
12.1. Toxicity to algae:	EC50	72h	229	mg/l	Pseudokirchnerie lla subcapitata		
12.2. Persistence and degradability:							Inorganic products cannot be eliminated from water through biological purification methods. reaction to boron
12.3. Bioaccumulative potential:	Log Pow		-1,25 - -0,757				Bioaccumulation is unlikely (LogPow < 1)., Not relevant for inorganic substances.
Water solubility:			47	g/l			Soluble 20°C
Water solubility:			379,9	g/l			Soluble 100°C

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)

12 01 99 wastes not otherwise specified

Recommendation:

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Sewage disposal shall be discouraged.
 Pay attention to local and national official regulations.
 E.g. dispose at suitable refuse site.
 E.g. suitable incineration plant.

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.

SECTION 14: Transport information

General statements

14.1. UN number or ID 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. Maritime transport in bulk according to IMO instruments

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 maternity protection (national implementation of the Directive 92/85/EEC)!
 Regulation (EC) No 1907/2006, Annex XVII
 Boric acid
 Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)!
 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

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 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 according to calculation procedure.
Repr. 1B, H360FD	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).

H361d Suspected of damaging the unborn child.
 H360FD May damage fertility. May damage the unborn child.
 H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H311 Toxic in contact with skin.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H331 Toxic if inhaled.
 H335 May cause respiratory irritation.
 EUH032 Contact with acids liberates very toxic gas.

Acute Tox. — Acute toxicity - oral
 Repr. — Reproductive toxicity
 Eye Irrit. — Eye irritation
 Skin Irrit. — Skin irritation
 STOT SE — Specific target organ toxicity - single exposure - respiratory tract irritation
 Acute Tox. — Acute toxicity - inhalation
 Acute Tox. — Acute toxicity - dermal

Key literature references and sources for data:

Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP) as amended.
 Guidelines for the preparation of safety data sheets as amended (ECHA).
 Guidelines on labelling and packaging according to the Regulation (EG) Nr. 1272/2008 (CLP) as amended (ECHA).
 Safety data sheets for the constituent substances.
 ECHA Homepage - Information about chemicals.
 GESTIS Substance Database (Germany).
 German Environment Agency "Rigoletto" information site on substances that are hazardous to water (Germany).
 EU Occupation Exposure Limits Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164, (EU) 2019/1831, each as amended.
 National Lists of Occupational Exposure Limits for each country as amended.
 Regulations on the transport of hazardous goods by road, rail, sea and air (ADR, RID, IMDG, IATA) as amended.

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)
ATE	Acute Toxicity Estimate
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)
BCF	Bioconcentration factor
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
DOC	Dissolved organic carbon
dw	dry weight
e.g.	for example (abbreviation of Latin 'exempli gratia'), for instance
EbCx, EyCx, EbLx (x = 10, 50)	Effect Concentration/Level of x % on reduction of the biomass (algae, plants)
EC	European Community
ECHA	European Chemicals Agency
ECx, ELx (x = 0, 3, 5, 10, 20, 50, 80, 100)	Effect Concentration/Level for x % effect
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)
ErCx, EµCx, ErLx (x = 10, 50)	Effect Concentration/Level of x % on inhibition of the growth rate (algae, plants)
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
Koc	Adsorption coefficient of organic carbon in the soil
Kow	octanol-water partition coefficient
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
IUPAC	International Union for Pure Applied Chemistry
LC50	Lethal Concentration to 50 % of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
Log Koc	Logarithm of adsorption coefficient of organic carbon in the soil
Log Kow, Log Pow	Logarithm of octanol-water partition coefficient
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
n.d.a.	no data available
NIOSH	National Institute for Occupational Safety and Health (USA)
NLP	No-longer-Polymer
NOEC, NOEL	No Observed Effect Concentration/Level
OECD	Organisation for Economic Co-operation and Development
org.	organic
OSHA	Occupational Safety and Health Administration (USA)

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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
TOC Total organic carbon
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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