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

Radiator Stop Leak Plus

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

Relevant identified uses of the substance or mixture:
See definition of the substance or mixture.

Uses advised against:
No information available at present.

1.3 Details of the supplier of the safety data sheet

LIQUI MOLY GmbH
Jerg-Wieland-Str. 4
89081 Ulm-Lehr
Tel.: (+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)
+1 872 5888271 (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
STOT RE	2	H373-May cause damage to organs through prolonged or repeated exposure.

2.2 Label elements

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

Warning

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

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.
P314-Get medical advice / attention if you feel unwell.
P501-Dispose of contents / container to an approved waste disposal facility.

EUH208-Contains Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1). May produce an allergic reaction.

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 %).
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

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, REACH-IT List-No.	203-473-3
CAS	107-21-1
content %	10-<20
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H302 STOT RE 2, H373 (kidneys) (oral)

Disodium tetraborate pentahydrate	**SVHC-substance**
Registration number (REACH)	01-2119490790-32-XXXX
Index	005-011-02-9
EINECS, ELINCS, NLP, REACH-IT List-No.	215-540-4
CAS	12179-04-3
content %	0,1-<1
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Eye Irrit. 2, H319 Repr. 1B, H360FD

Sodium nitrite	
Registration number (REACH)	01-2119471836-27-XXXX
Index	007-010-00-4
EINECS, ELINCS, NLP, REACH-IT List-No.	231-555-9
CAS	7632-00-0
content %	0,1-<0,25
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Ox. Sol. 3, H272 Acute Tox. 3, H301 Eye Irrit. 2, H319 Aquatic Acute 1, H400 (M=1)

Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	
Registration number (REACH)	---
Index	613-167-00-5
EINECS, ELINCS, NLP, REACH-IT List-No.	---
CAS	55965-84-9

content %	0,001-<0,0015
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	EUH071 Acute Tox. 2, H310 Acute Tox. 2, H330 Acute Tox. 3, H301 Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)
Specific Concentration Limits and ATE	Skin Corr. 1C, H314: >=0,6 % Skin Irrit. 2, H315: >=0,06 % Eye Dam. 1, H318: >=0,6 % Eye Irrit. 2, H319: >=0,06 % Skin Sens. 1A, H317: >=0,0015 %

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
Wash thoroughly using copious water - remove contaminated clothing immediately. If skin irritation occurs (redness etc.), consult 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.
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.
The following may occur:
Irritation of the eyes
With long-term contact:
Dermatitis (skin inflammation)
Sensitive individuals:
Allergic reaction possible.

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
CO2
Extinction powder
Foam
Water jet spray

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
Oxides of nitrogen
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.
Ensure sufficient supply of air.
Avoid contact with eyes or skin.
If applicable, caution - risk of slipping.

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.

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.
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.
Solvent resistant floor
Do not store with oxidizing agents.
Store in a well ventilated 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	Ethanediol		Content %:10-<20
WEL-TWA: 10 mg/m3 (particulate), 52 mg/m3 (vapour) (WEL), 20 ppm (52 mg/m3) (EU)		WEL-STEL: 104 mg/m3 (vapour) (WEL), 40 ppm (104 mg/m3) (EU)		---
Monitoring procedures:	- Draeger - Ethylene Glycol 10 (5) (81 01 351) - Compur - KITA-232 SA (502 342) - Compur - KITA-232 SB (550 267) - NIOSH 5500 (ETHYLENE GLYCOL) - 1993 - NIOSH 5523 (GLYCOLS) - 1996 - OSHA PV2024 (Ethylene glycol) - 1999 - EU project BC/CEN/ENTR/000/2002-16 card 11-2 (2004)			
BMGV: ---			Other information: Sk (particulate, vapour)	

GB	Chemical Name	Disodium tetraborate pentahydrate		Content %:0,1-<1
WEL-TWA: 1 mg/m3		WEL-STEL: ---		---
Monitoring procedures:	---			
BMGV: ---			Other information: ---	

GB	Chemical Name	Ethanediol		Content %:
WEL-TWA: 10 mg/m3 (particulate), 52 mg/m3 (vapour) (WEL), 20 ppm (52 mg/m3) (EU)		WEL-STEL: 104 mg/m3 (vapour) (WEL), 40 ppm (104 mg/m3) (EU)		---
Monitoring procedures:	- Draeger - Ethylene Glycol 10 (5) (81 01 351) - Compur - KITA-232 SA (502 342) - Compur - KITA-232 SB (550 267) - NIOSH 5500 (ETHYLENE GLYCOL) - 1993 - 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)			
BMGV: ---			Other information: Sk (particulate, vapour)	

GB	Chemical Name	Silicon dioxide - amorphous		Content %:
WEL-TWA: 6 mg/m3 (total inh. dust), 2,4 mg/m3 (resp. dust)		WEL-STEL: ---		---
Monitoring procedures:	---			
BMGV: ---			Other information: ---	

Ethanediol

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	10	mg/l	
	Environment - marine		PNEC	1	mg/l	
	Environment - sediment		PNEC	20,9	mg/kg	
	Environment - soil		PNEC	1,53	mg/kg	
	Environment - sewage treatment plant		PNEC	199,5	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	10	mg/l	
	Environment - sediment, freshwater		PNEC	37	mg/kg dry weight	
	Environment - sediment, marine		PNEC	3,7	mg/kg dry weight	
Consumer	Human - inhalation	Long term, local effects	DNEL	7	mg/m3	

Consumer	Human - dermal	Long term, systemic effects	DNEL	53	mg/kg	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	35	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	106	mg/kg bw/d	

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	1,15	mg/kg bw/day	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	4,9	mg/m3	
Consumer	Human - dermal	Long term, systemic effects	DNEL	231,8	mg/kg bw/day	
Consumer	Human - oral	Short term, systemic effects	DNEL	0,79	mg/kg	
Consumer	Human - inhalation	Long term, local effects	DNEL	17,04	mg/l	
Consumer	Human - inhalation	Short term, local effects	DNEL	17,04	mg/m3	
Consumer	Human - oral	Short term, systemic effects	DNEL	1,15	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	9,8	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	316,4	mg/kg bw/day	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	17,04	mg/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	17,04	mg/m3	

Sodium nitrite

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,0054	mg/l	
	Environment - marine		PNEC	0,00616	mg/l	
	Environment - sewage treatment plant		PNEC	21	mg/l	
	Environment - sediment, freshwater		PNEC	0,019	mg/kg dry weight	
	Environment - sediment, marine		PNEC	0,0223	mg/kg dry weight	
	Environment - soil		PNEC	0,000733	mg/kg	
	Environment - sewage treatment plant		PNEC	21	mg/kg	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	2	mg/m3	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	2	mg/m3	

Ethanediol

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	10	mg/l	
	Environment - marine		PNEC	1	mg/l	
	Environment - sporadic (intermittent) release		PNEC	10	mg/l	
	Environment - sewage treatment plant		PNEC	199,5	mg/l	
	Environment - sediment, freshwater		PNEC	37	mg/kg dw	
	Environment - soil		PNEC	1,53	mg/kg	
Industrial	Human - inhalation	Long term, local effects	DNEL	35	mg/m3	
Industrial	Human - dermal	Long term, systemic effects	DNEL	106	mg/kg bw/d	
Consumer	Human - inhalation	Long term, local effects	DNEL	7	mg/m3	
Consumer	Human - dermal	Long term, systemic effects	DNEL	53	mg/m3	

Silicon dioxide - amorphous						
Area of application	**Exposure route / Environmental compartment**	**Effect on health**	**Descriptor**	**Value**	**Unit**	**Note**
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	4	mg/m3	

GB 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:
Protective plastic gloves (EN ISO 374).

If applicable
Protective nitrile gloves (EN ISO 374).
Protective PVC gloves (EN ISO 374).
Minimum layer thickness in mm:
>= 0,4
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:
Normally not necessary.
If OES or MEL is exceeded.
Filter A 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:	Light brown, Turbid
Odour:	Characteristic
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:	Flammable
Lower explosion limit:	There is no information available on this parameter.
Upper explosion limit:	There is no information available on this parameter.
Flash point:	>100 °C
Auto-ignition temperature:	There is no information available on this parameter.
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:	Mixable
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:	1,037 g/ml (20°C)
Relative vapour density:	There is no information available on this parameter.
Particle characteristics:	Does not apply to liquids.

9.2 Other information

Explosives:	Product is not explosive.
Oxidising liquids:	No
Bulk density:	n.a.

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 oxidizing agents.

10.6 Hazardous decomposition products
No decomposition when used as directed.

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).

Radiator Stop Leak Plus

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	ATE	>2000	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.
Symptoms:						n.d.a.

Ethanediol

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	1600	mg/kg	Human being		
Acute toxicity, by dermal route:	LD50	9530	mg/kg	Rabbit		
Acute toxicity, by dermal route:	LD50	>3500	mg/kg	Mouse		
Skin corrosion/irritation:				Rabbit		Not irritant
Serious eye damage/irritation:				Rabbit		Not irritant
Respiratory or skin sensitisation:				Human being	(Patch-Test)	Negative
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:				Rat	in vivo	Negative
Reproductive toxicity:	NOAEL	1000	mg/kg bw/d	Rat		
Symptoms:						ataxia, breathing difficulties, unconsciousness, cramps, fatigue

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
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Not sensitizising
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

Sodium nitrite

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	180	mg/kg	Rat		
Acute toxicity, by inhalation:	LC50	5,5	mg/l/4h	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)	Slightly irritant, Eye Irrit. 2
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact)
Germ cell mutagenicity:				Salmonella typhimurium	OECD 471 (Bacterial Reverse Mutation Test)	Negative
Aspiration hazard:						No
Symptoms:						breathing difficulties, abdominal pain, unconsciousness, drop in blood pressure, annoyance, disturbed heart rhythm, collapse, headaches, mucous membrane irritation, dizziness, nausea and vomiting.

Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	64-66	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	Acute Tox. 3
Acute toxicity, by dermal route:	LD50	87,12	mg/kg	Rabbit		Acute Tox. 2
Acute toxicity, by dermal route:	LD50	> 141	mg/kg	Rat	OECD 402 (Acute Dermal Toxicity)	Acute Tox. 2
Acute toxicity, by inhalation:	LC50	0,17-0,33	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Aerosol, Dust, Acute Tox. 2

Acute toxicity, by inhalation:	LC50	0,81	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Vapours, Acute Tox. 2
Skin corrosion/irritation:				Rabbit		Skin Corr. 1C
Serious eye damage/irritation:				Rabbit		Eye Dam. 1
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Yes (skin contact), Skin Sens. 1A
Symptoms:						diarrhoea, mucous membrane irritation, watering eyes

Ethanediol						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	7712	mg/kg	Rat	IUCLID Chem. Data Sheet (ESIS)	Does not conform with EU classification.
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

Silicon dioxide - amorphous						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	>5000	mg/kg	Rabbit	IUCLID Chem. Data Sheet (ESIS)	
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Not irritant
Respiratory or skin sensitisation:				Guinea pig	IUCLID Chem. Data Sheet (ESIS)	Not sensitizising
Germ cell mutagenicity:				Salmonella typhimurium	(Ames-Test)	Negative
Carcinogenicity:						Negative
Reproductive toxicity:	NOAEL	>497	mg/kg bw/d			No indications of such an effect.
Aspiration hazard:						No
Specific target organ toxicity - repeated exposure (STOT-RE), inhalat.:	NOAEL	0,035	mg/l			Negative

11.2. Information on other hazards

Radiator Stop Leak Plus						
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).

Radiator Stop Leak Plus

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.

Ethanediol

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to bacteria:	EC20	30min	>1995	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	
12.1. Toxicity to fish:	LC50	96h	>10000	mg/l	Pimephales promelas	IUCLID Chem. Data Sheet (ESIS)	
12.1. Toxicity to fish:	NOEC/NOEL	7d	15380	mg/l	Pimephales promelas	U.S. EPA ECOTOX Database	
12.1. Toxicity to daphnia:	EC50	48h	>100	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL		8590	mg/l	Daphnia magna	U.S. EPA ECOTOX Database	
12.1. Toxicity to algae:	EC50	96h	6500-7500	mg/l	Pseudokirchneriella subcapitata		
12.2. Persistence and degradability:		28d	56	%		OECD 301 C (Ready Biodegradability - Modified MITI Test (I))	
12.2. Persistence and degradability:		10d	90-100	%		OECD 301 A (Ready Biodegradability - DOC Die-Away Test)	Readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		-1,36				Not to be expected
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

Toxicity to bacteria:	EC50	16h	>10000	mg/l	Pseudomonas putida	IUCLID Chem. Data Sheet (ESIS)	
Other information:	BOD5		0,78	g/g			IUCLID

Disodium tetraborate pentahydrate

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.2. Persistence and degradability:							Inorganic products cannot be eliminated from water through biological purification methods.
12.1. Toxicity to fish:	NOEC/NOEL	34d	6,4	mg/l	Brachydanio rerio		
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 daphnia:	NOEC/NOEL	21d	10,8	mg/l	Daphnia magna		
12.1. Toxicity to algae:	EC50	96h	52,4	mg/l	Pseudokirchneriella subcapitata		
12.1. Toxicity to algae:	NOEC/NOEL	10d	50	mg/l			
12.3. Bioaccumulative potential:	BCF		121	L/kg			Analogous conclusion

Sodium nitrite

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	NOEC/NOEL	28d	1,05	mg/l	Cyprinus carpio	OECD 210 (Fish, Early-Life Stage Toxicity Test)	
Water solubility:							Soluble
12.1. Toxicity to fish:	LC50	96h	0,54-26,3	mg/l	Oncorhynchus mykiss		
12.1. Toxicity to daphnia:	EC50	48h	15,4	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	EC50	72h	>100	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:							Not relevant for inorganic substances.
12.3. Bioaccumulative potential:							Not relevant for inorganic substances.
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC10	3h	210	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	

Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes

12.1. Toxicity to algae:	NOEC/NOEL	72h	0,0012	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	NOEC/NOEL	48h	0,00064	mg/l	Skeletonema costatum	ISO 10253	
12.2. Persistence and degradability:			>60	%	activated sludge	OECD 301 D (Ready Biodegradability - Closed Bottle Test)	Does not conform with EU classification.
12.1. Toxicity to algae:	EC50	48h	0,0052	mg/l	Skeletonema costatum	ISO 10253	
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC50	3h	7,92	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	

Ethanediol

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.2. Persistence and degradability:		28d	90-100	%		OECD 301 A (Ready Biodegradability - DOC Die-Away Test)	Readily biodegradable
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	40761	mg/l	Oncorhynchus mykiss		References
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		
12.1. Toxicity to algae:	IC5	7d	> 10000	mg/l	Scenedesmus quadricauda		
Toxicity to bacteria:	EC20	30min	>10000	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	
Other information:	BOD5		0,78	g/g			IUCLID
Other information:	COD		1,19	g/g			IUCLID
Other information:	ThOD		1,29	g/g			IUCLID

Silicon dioxide - amorphous

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
12.1. Toxicity to algae:	EC50	72h	>10000	mg/l	Desmodesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	

12.1. Toxicity to daphnia:	NOEC/NOEL	30d	34223	mg/l	Daphnia magna		
12.1. Toxicity to fish:	LC50	96h	>10000	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	
12.2. Persistence and degradability:							Not relevant for inorganic substances.
12.1. Toxicity to algae:	IC50	72h	440	mg/l	Pseudokirchneriella subcapitata	IUCLID Chem. Data Sheet (ESIS)	
12.1. Toxicity to algae:	NOEC/NOEL	72h	60	mg/l	Pseudokirchneriella subcapitata	IUCLID Chem. Data Sheet (ESIS)	
12.1. Toxicity to daphnia:	EC50	24h	>1000	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	

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)
07 07 01 aqueous washing liquids and mother liquors
Recommendation:
Sewage disposal shall be discouraged.
Pay attention to local and national official regulations.
Implement substance recycling.
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 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): 0,0221 %

Treated goods as per Regulation (EU) No. 528/2012 must display specific information on the label.
Please note Article 58 paragraph (3) subparagraph 2 of Regulation (EU) No. 528/2012.
Approval of the biocidal active substance may mean that special conditions are required for marketing the treated goods.
These are indicated in the approval of the active substance.

15.2 Chemical safety assessment
A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections: 1-16
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
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).
H330 Fatal if inhaled.
H310 Fatal in contact with skin.
H314 Causes severe skin burns and eye damage.
H272 May intensify fire, oxidiser.
H360FD May damage fertility. May damage the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.
H317 May cause an allergic skin reaction.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
EUH071 Corrosive to the respiratory tract.

STOT RE — Specific target organ toxicity - repeated exposure
Acute Tox. — Acute toxicity - oral
Eye Irrit. — Eye irritation

Repr. — Reproductive toxicity
Ox. Sol. — Oxidising solid
Aquatic Acute — Hazardous to the aquatic environment - acute
Acute Tox. — Acute toxicity - dermal
Acute Tox. — Acute toxicity - inhalation
Skin Corr. — Skin corrosion
Eye Dam. — Serious eye damage
Skin Sens. — Skin sensitization
Aquatic Chronic — Hazardous to the aquatic environment - chronic

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
NLP No-longer-Polymer
NOEC, NOEL No Observed Effect Concentration/Level
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
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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