



Safety Data Sheet according to (EC) No 1907/2006 as amended

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BONDERITE L-GP 318 DRYFILM COATING ACHESON

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V002.0

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

1.1. Product identifier

BONDERITE L-GP 318 DRYFILM COATING ACHESON

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

Intended use:
Dry film lubricant

1.3. Details of the supplier of the safety data sheet

Henkel AG & Co. KGaA
Henkelstr. 67
40589 Düsseldorf

Germany

Phone: +49 211 797 0

SDSinfo.Adhesive@henkel.com

For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or www.henkel-adhesives.com.

1.4. Emergency telephone number

The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Serious eye irritation
H319 Causes serious eye irritation.

Category 2

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Signal word:

Warning

Hazard statement:

H319 Causes serious eye irritation.

Supplemental information Contains: 1,2-Benzisothiazol-3(2H)-one; Isothiazolinone mixture (C(M)IT/MIT (3:1))
May produce an allergic reaction.

Precautionary statement: P280 Wear eye protection/face protection.
Prevention

2.3. Other hazards

None if used properly.
Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

Following substances are present in a concentration $\geq 0,1\%$ and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in concentration \geq the concentration limit that are assessed to be a PBT, vPvB or ED.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No. EC Number REACH-Reg No.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
Methyl oxirane polymer with oxirane, monobutyl ether 9038-95-3	1- < 5 %	Eye Irrit. 2, H319		
Polyoxyethylene trimethylnonyl ether 60828-78-6	1- < 3 %	Eye Dam. 1, H318 Skin Irrit. 2, H315 Aquatic Chronic 3, H412		
2-Dimethylaminoethanol 108-01-0 203-542-8 01-2119492298-24	0,1- < 1 %	Acute Tox. 3, Inhalation, H331 Acute Tox. 4, Oral, H302 Flam. Liq. 3, H226 Acute Tox. 4, Dermal, H312 Skin Corr. 1B, H314 Eye Dam. 1, H318	STOT SE 3; H335; C >= 5 % ===== inhalation:ATE = 6,1 mg/l;vapour	
1,2-Benzisothiazol-3(2H)-one 2634-33-5 220-120-9 01-2120761540-60	0,005- < 0,05 %	Aquatic Acute 1, H400 Aquatic Chronic 2, H411 Acute Tox. 4, Oral, H302 Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Dam. 1, H318 Acute Tox. 2, Inhalation, H330 Flam. Liq. 2, H225	Skin Sens. 1; H317; C >= 0,05 % ===== M acute = 1	
2-n-butyl-benzo[d]isothiazol-3-one 4299-07-4 420-590-7	0,0025- < 0,025 %	Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Skin Corr. 1B, H314	M acute = 10 M chronic = 10 ===== oral:ATE = 4.267 mg/kg	
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9 01-2120764691-48	0,0002- < 0,0015 % (1,5 ppm- < 15 ppm)	Acute Tox. 2, Dermal, H310 Skin Corr. 1C, H314 Aquatic Chronic 1, H410 Skin Sens. 1A, H317 Aquatic Acute 1, H400 Acute Tox. 2, Inhalation, H330 Eye Dam. 1, H318 Acute Tox. 3, Oral, H301	Eye Dam. 1; H318; C >= 0,6 % Eye Irrit. 2; H319; C 0,06 - < 0,6 % Skin Corr. 1C - Corrosive; H314; C >= 0,6 % Skin Irrit. 2; H315; C 0,06 - < 0,6 % Skin Sens. 1A; H317; C >= 0,0015 % ===== M acute = 100 M chronic = 100	

**For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.**

SECTION 4: First aid measures**4.1. Description of first aid measures****Inhalation:**

Move to fresh air, consult doctor if complaint persists.

Skin contact:

Rinse with running water and soap. Apply replenishing cream. Change all contaminated clothing.
In case of adverse health effects seek medical advice.

Eye contact:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

In case of adverse health effects seek medical advice.

Ingestion:

Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed

EYE: Irritation, conjunctivitis.

4.3. Indication of any immediate medical attention and special treatment needed

See section: Description of first aid measures

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media:**

All common extinguishing agents are suitable.

Extinguishing media which must not be used for safety reasons:

None known

5.2. Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in fires.

5.3. Advice for firefighters

Wear self-contained breathing apparatus.

Additional information:

Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Danger of slipping on spilled product.

Avoid contact with skin and eyes.

6.2. Environmental precautions

Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up

Remove with liquid-absorbing material (sand, peat, sawdust).

Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Avoid skin and eye contact.

Ensure good ventilation/suction at the workplace.

See advice in section 8

Hygiene measures:

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke while working.

7.2. Conditions for safe storage, including any incompatibilities

Ensure good ventilation/extraction.

Store in sealed original container.

Temperatures between + 5 °C and + 30 °C

7.3. Specific end use(s)

Dry film lubricant

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Germany

None

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
2-Dimethylaminoethanol 108-01-0	aqua (freshwater)		0,0661 mg/l				
2-Dimethylaminoethanol 108-01-0	aqua (marine water)		0,004 mg/l				
2-Dimethylaminoethanol 108-01-0	aqua (intermittent releases)		0,661 mg/l				
2-Dimethylaminoethanol 108-01-0	sediment (freshwater)				0,246 mg/kg		
2-Dimethylaminoethanol 108-01-0	Soil				0,01 mg/kg		
2-Dimethylaminoethanol 108-01-0	sewage treatment plant (STP)		10 mg/l				
2-Dimethylaminoethanol 108-01-0	sediment (marine water)				0,015 mg/kg		
1,2-Benzisothiazol-3(2H)-one 2634-33-5	aqua (freshwater)		0,00403 mg/l				
1,2-Benzisothiazol-3(2H)-one 2634-33-5	aqua (marine water)		0,000403 mg/l				
1,2-Benzisothiazol-3(2H)-one 2634-33-5	aqua (intermittent releases)		0,0011 mg/l				
1,2-Benzisothiazol-3(2H)-one 2634-33-5	sewage treatment plant (STP)		1,03 mg/l				
1,2-Benzisothiazol-3(2H)-one 2634-33-5	sediment (freshwater)				0,0499 mg/kg		
1,2-Benzisothiazol-3(2H)-one 2634-33-5	sediment (marine water)				0,00499 mg/kg		
1,2-Benzisothiazol-3(2H)-one 2634-33-5	Soil				3 mg/kg		
Mixture, 3(2H)-Isothiazolone, 5-chloro-2- methyl-, mixt. with 2-methyl-3(2H)- isothiazolone 55965-84-9	aqua (freshwater)		0,00339 mg/l				
Mixture, 3(2H)-Isothiazolone, 5-chloro-2- methyl-, mixt. with 2-methyl-3(2H)- isothiazolone 55965-84-9	aqua (marine water)		0,00339 mg/l				
Mixture, 3(2H)-Isothiazolone, 5-chloro-2- methyl-, mixt. with 2-methyl-3(2H)- isothiazolone 55965-84-9	sewage treatment plant (STP)		0,23 mg/l				
Mixture, 3(2H)-Isothiazolone, 5-chloro-2- methyl-, mixt. with 2-methyl-3(2H)- isothiazolone 55965-84-9	sediment (freshwater)				0,027 mg/kg		
Mixture, 3(2H)-Isothiazolone, 5-chloro-2- methyl-, mixt. with 2-methyl-3(2H)- isothiazolone 55965-84-9	sediment (marine water)				0,027 mg/kg		
Mixture, 3(2H)-Isothiazolone, 5-chloro-2- methyl-, mixt. with 2-methyl-3(2H)- isothiazolone 55965-84-9	Soil				0,01 mg/kg		
Mixture, 3(2H)-Isothiazolone, 5-chloro-2- methyl-, mixt. with 2-methyl-3(2H)- isothiazolone 55965-84-9	aqua (intermittent releases)		0,00339 mg/l				

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
2-Dimethylaminoethanol 108-01-0	Workers	inhalation	Long term exposure - systemic effects		1,76 mg/m ³	
2-Dimethylaminoethanol 108-01-0	Workers	inhalation	Acute/short term exposure - systemic effects		5,28 mg/m ³	
2-Dimethylaminoethanol 108-01-0	Workers	inhalation	Long term exposure - local effects		1,76 mg/m ³	
2-Dimethylaminoethanol 108-01-0	Workers	inhalation	Acute/short term exposure - local effects		13,53 mg/m ³	
2-Dimethylaminoethanol 108-01-0	Workers	dermal	Long term exposure - systemic effects		0,25 mg/kg	
2-Dimethylaminoethanol 108-01-0	Workers	dermal	Acute/short term exposure - systemic effects		1,2 mg/kg	
2-Dimethylaminoethanol 108-01-0	Workers	dermal	Long term exposure - local effects		0,1 mg/cm ²	
2-Dimethylaminoethanol 108-01-0	General population	inhalation	Long term exposure - systemic effects		0,438 mg/m ³	
2-Dimethylaminoethanol 108-01-0	General population	oral	Long term exposure - systemic effects		0,126 mg/kg	
1,2-Benzisothiazol-3(2H)-one 2634-33-5	Workers	inhalation	Long term exposure - systemic effects		6,81 mg/m ³	
1,2-Benzisothiazol-3(2H)-one 2634-33-5	Workers	dermal	Long term exposure - systemic effects		0,966 mg/kg	
1,2-Benzisothiazol-3(2H)-one 2634-33-5	General population	inhalation	Long term exposure - systemic effects		1,2 mg/m ³	
1,2-Benzisothiazol-3(2H)-one 2634-33-5	General population	dermal	Long term exposure - systemic effects		0,345 mg/kg	
Mixture, 3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone 55965-84-9	Workers	inhalation	Long term exposure - local effects		0,02 mg/m ³	
Mixture, 3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone 55965-84-9	Workers	inhalation	Acute/short term exposure - local effects		0,04 mg/m ³	
Mixture, 3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone 55965-84-9	General population	inhalation	Long term exposure - local effects		0,02 mg/m ³	
Mixture, 3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone 55965-84-9	General population	inhalation	Acute/short term exposure - local effects		0,04 mg/m ³	
Mixture, 3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone 55965-84-9	General population	oral	Long term exposure - systemic effects		0,09 mg/kg	
Mixture, 3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone 55965-84-9	General population	oral	Acute/short term exposure - systemic effects		0,11 mg/kg	

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/suction at the workplace.

Respiratory protection:

In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387).

This recommendation should be matched to local conditions.

Hand protection:

Chemical-resistant protective gloves (EN 374). Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374): Polychloroprene (CR; \geq 1 mm thickness) or natural rubber (NR; \geq 1 mm thickness) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Polychloroprene (CR; \geq 1 mm thickness) or natural rubber (NR; \geq 1 mm thickness) This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:

Protective goggles

Protective eye equipment should conform to EN166.

Skin protection:

Suitable protective clothing

Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	liquid
Delivery form	liquid
Colour	colourless
Odor	neutral
Melting point	Not applicable, Product is a liquid
Solidification temperature	0 °C (32 °F)
Initial boiling point	100 °C (212 °F)
Flammability	The product is not flammable.
Explosive limits	Not applicable, The product is not flammable.
Flash point	> 93 °C (> 199.4 °F)
Auto-ignition temperature	Not applicable, Aqueous solution
Decomposition temperature	Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use
pH	8,0 - 10,0
(20 °C (68 °F); Conc.: 100 % product)	
Viscosity (kinematic)	< 20 mm ² /s
(40 °C (104 °F);)	
Viscosity, dynamic	< 100 mPa.s no method
(; 20 °C (68 °F))	
Flow cup viscosity	13 - 17 s C-Q-50; FORD CUP #4 MEASUREMENT

(20 °C (68 °F); Type of cup: Ford-Cup ;;C-Q-50; FORD CUP #4 MEASUREMENT METHOD)	METHOD
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Miscible
Partition coefficient: n-octanol/water	Not applicable
Vapour pressure (20 °C (68 °F))	Mixture < 25 hPa
Density (20 °C (68 °F))	1,15 g/cm ³ no method
Relative vapour density: (20 °C)	< 1
Particle characteristics	Not applicable Product is a liquid

9.2. Other information

Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity

Reaction with strong oxidants.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

No decomposition if used according to specifications.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

None if used for intended purpose.

In case of fire toxic gases can be released.

SECTION 11: Toxicological information

General toxicological information:

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation (EC) No 1272/2008. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

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

Acute oral toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Polyoxyethylene trimethylnonyl ether 60828-78-6	LD50	5.650 mg/kg	rat	not specified
2-Dimethylaminoethanol 108-01-0	LD50	1.182,7 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
1,2-Benzisothiazol-3(2H)- one 2634-33-5	LD50	490 mg/kg	rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
2-n-butyl- benzo[d]isothiazol-3-one 4299-07-4	LD50	4.267 - 4.732 mg/kg	rat	not specified
2-n-butyl- benzo[d]isothiazol-3-one 4299-07-4	Acute toxicity estimate (ATE)	4.267 mg/kg		Expert judgement
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	LD50	66 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)

Acute dermal toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Polyoxyethylene trimethylnonyl ether 60828-78-6	LD50	4.971 mg/kg	rabbit	not specified
2-Dimethylaminoethanol 108-01-0	LD50	1.219 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
1,2-Benzisothiazol-3(2H)- one 2634-33-5	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
2-n-butyl- benzo[d]isothiazol-3-one 4299-07-4	LD50	> 2.000 mg/kg	rat	not specified
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	LD50	87,12 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)

Acute inhalative toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
2-Dimethylaminoethanol 108-01-0	Acute toxicity estimate (ATE)	6,1 mg/l	vapour			Expert judgement
2-Dimethylaminoethanol 108-01-0	LC50	1641 ppm	vapour	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
1,2-Benzisothiazol-3(2H)- one 2634-33-5	LC50	0,4 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	LC50	0,171 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
2-Dimethylaminoethanol 108-01-0	corrosive		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
1,2-Benzisothiazol-3(2H)- one 2634-33-5	moderately irritating	4 h	rabbit	EPA OPP 81-5 (Acute Dermal Irritation)
2-n-butyl- benzo[d]isothiazol-3-one 4299-07-4	corrosive	4 h		not specified
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	corrosive	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Causes serious eye irritation.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
2-Dimethylaminoethanol 108-01-0	highly irritating		rabbit	not specified
1,2-Benzisothiazol-3(2H)- one 2634-33-5	corrosive	3 h	rabbit	EPA OPP 81-4 (Acute Eye Irritation)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	Category 1 (irreversible effects on the eye)		rabbit	not specified

Respiratory or skin sensitization:

May cause allergic reaction.

Hazardous substances CAS-No.	Result	Test type	Species	Method
2-Dimethylaminoethanol 108-01-0	ambiguous		mouse	not specified
1,2-Benzisothiazol-3(2H)- one 2634-33-5	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
1,2-Benzisothiazol-3(2H)- one 2634-33-5	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
2-n-butyl- benzo[d]isothiazol-3-one 4299-07-4	sensitising			not specified
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	sensitising	Mouse local lymphnode assay (LLNA)	mouse	not specified

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
2-Dimethylaminoethanol 108-01-0	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		not specified
1,2-Benzisothiazol-3(2H)- one 2634-33-5	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
1,2-Benzisothiazol-3(2H)- one 2634-33-5	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
1,2-Benzisothiazol-3(2H)- one 2634-33-5	positive without metabolic activation	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	ambiguous	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	positive	in vitro mammalian chromosome aberration test	with and without		EPA OPP 84-2 (Mutagenicity Testing)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	positive	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	negative	DNA damage and repair assay, unscheduled DNA synthesis in mammalian cells in vitro	not applicable		OECD Guideline 482 (Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells In Vitro)
1,2-Benzisothiazol-3(2H)- one 2634-33-5	negative	oral: gavage		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
1,2-Benzisothiazol-3(2H)- one 2634-33-5	negative	oral: unspecified		rat	OECD Guideline 486 (Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells in vivo)
2-n-butyl- benzo[d]isothiazol-3-one 4299-07-4	negative				not specified
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	negative	oral: gavage		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	negative	oral: gavage		mouse	OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	negative	oral: feed		Drosophila melanogaster	OECD Guideline 477 (Genetic Toxicology: Sex-linked Recessive Lethal Test in Drosophila melanogaster)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	negative	oral: gavage		rat	OECD Guideline 486 (Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells in vivo)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	negative	oral: gavage		rat	EPA OPP 84-2 (Mutagenicity Testing)

Carcinogenicity

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	not carcinogenic	oral: drinking water	2 y daily	rat	male/female	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
1,2-Benzisothiazol-3(2H)-one 2634-33-5	NOAEL P 112 mg/kg NOAEL F1 56,6 mg/kg NOAEL F2 56,6 mg/kg	Two generation study	oral: feed	rat	EPA OPPTS 870.3800 (Reproduction and Fertility Effects)
2-n-butylbenzo[d]isothiazol-3-one 4299-07-4	NOAEL P 600 ppm NOAEL F1 1700 ppm	Two generation study	oral: feed	rat	not specified
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	NOAEL P 30 ppm NOAEL F1 300 ppm NOAEL F2 300 ppm	Two generation study	oral: drinking water	rat	OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)

STOT-single exposure:

No data available.

STOT-repeated exposure::

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
2-Dimethylaminoethanol 108-01-0	NOAEL 0,18	oral: feed	90 days daily	rat	not specified
2-Dimethylaminoethanol 108-01-0	NOAEL 24 mg/l	inhalation	13 weeks 6 h/d, 5 d/w	rat	not specified
1,2-Benzisothiazol-3(2H)-one 2634-33-5	NOAEL 150 mg/kg	oral: gavage	28 days daily	rat	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
1,2-Benzisothiazol-3(2H)-one 2634-33-5	NOAEL 69 mg/kg	oral: feed	90 days daily	rat	EPA OPP 82-1 (90-Day Oral Toxicity)
2-n-butylbenzo[d]isothiazol-3-one 4299-07-4	NOAEL 15 mg/kg		90 d daily	rat	not specified
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	NOAEL 16,3 mg/kg	oral: drinking water	90 d daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	NOAEL 0.34 mg/m3	inhalation: aerosol	90 d 6 h/d, 5 d/w	rat	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	NOAEL 2,625 mg/kg	dermal	90 d 6 h/d	rat	EPA OPP 82-3 (Subchronic Dermal Toxicity 90 Days)

Aspiration hazard:

No data available.

11.2 Information on other hazards

not applicable

SECTION 12: Ecological information

General ecological information:

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation (EC) No 1272/2008. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

12.1. Toxicity

Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Methyl oxirane polymer with oxirane, monobutyl ether 9038-95-3	LC50	> 1.000 mg/l	96 h	not specified	OECD Guideline 203 (Fish, Acute Toxicity Test)
Polyoxyethylene trimethylnonyl ether 60828-78-6	LC50	39 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-Dimethylaminoethanol 108-01-0	LC50	81 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
1,2-Benzisothiazol-3(2H)-one 2634-33-5	LC50	2,15 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
1,2-Benzisothiazol-3(2H)-one 2634-33-5	NOEC	0,21 mg/l	30 d	Oncorhynchus mykiss	OECD Guideline 215 (Fish, Juvenile Growth Test)
2-n-butyl-benzo[d]isothiazol-3-one 4299-07-4	LC50	0,15 mg/l	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	OECD Guideline 203 (Fish, Acute Toxicity Test)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	LC50	0,22 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	NOEC	0,098 mg/l	28 d	Oncorhynchus mykiss	OECD Guideline 210 (fish early lite stage toxicity test)

Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Polyoxyethylene trimethylnonyl ether 60828-78-6	EC50	81,2 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-Dimethylaminoethanol 108-01-0	EC50	98,77 mg/l	48 h	Daphnia magna	EU Method C.2 (Acute Toxicity for Daphnia)
1,2-Benzisothiazol-3(2H)-one 2634-33-5	EC50	2,9 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-n-butyl-benzo[d]isothiazol-3-one 4299-07-4	EC50	0,093 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	EC50	0,12 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic toxicity to aquatic invertebrates

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
1,2-Benzisothiazol-3(2H)-one 2634-33-5	NOEC	1,2 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	NOEC	0,0036 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
2-Dimethylaminoethanol 108-01-0	EC50	35 mg/l	72 h	Scenedesmus sp.	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,2-Benzisothiazol-3(2H)-one 2634-33-5	EC50	0,11 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,2-Benzisothiazol-3(2H)-one 2634-33-5	NOEC	0,0403 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-n-butyl-benzo[d]isothiazol- 3-one 4299-07-4	ErC50	0,45 mg/l	72 h	Desmodesmus subspicatus (reported as Scenedesmus subspicatus)	not specified
2-n-butyl-benzo[d]isothiazol- 3-one 4299-07-4	NOEC	0,099 mg/l	72 h	Desmodesmus subspicatus (reported as Scenedesmus subspicatus)	not specified
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	NOEC	0,00064 mg/l	48 h	Skeletonema costatum	OECD Guideline 201 (Alga, Growth Inhibition Test)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	EC50	0,0063 mg/l	72 h	Skeletonema costatum	OECD Guideline 201 (Alga, Growth Inhibition Test)

Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
2-Dimethylaminoethanol 108-01-0	EC10	> 8.000 mg/l	16 h		not specified
1,2-Benzisothiazol-3(2H)-one 2634-33-5	EC50	23 mg/l	3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	EC20	0,97 mg/l	3 h	activated sludge	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
Polyoxyethylene trimethylnonyl ether 60828-78-6	not readily biodegradable.	not specified	> 0 - < 60 %	28 d	OECD 301 A - F
2-Dimethylaminoethanol 108-01-0		aerobic	> 90 %	13 d	OECD Guideline 302 B (Inherent biodegradability: Zahn- Wellens/EMPA Test)
2-Dimethylaminoethanol 108-01-0	readily biodegradable	aerobic	60,5 %	14 day	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	inherently biodegradable	aerobic	100 %	28 d	OECD Guideline 302 B (Inherent biodegradability: Zahn- Wellens/EMPA Test)
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	readily biodegradable	aerobic	> 60 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)

12.3. Bioaccumulative potential

Hazardous substances CAS-No.	Bioconcentratio n factor (BCF)	Exposure time	Temperature	Species	Method
1,2-Benzisothiazol-3(2H)-one 2634-33-5	6,62	56 d		not specified	other guideline:
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	3,6			calculation	QSAR (Quantitative Structure Activity Relationship)

12.4. Mobility in soil

Hazardous substances CAS-No.	LogPow	Temperature	Method
2-Dimethylaminoethanol 108-01-0	-0,55	23 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
1,2-Benzisothiazol-3(2H)-one 2634-33-5	0,7	20 °C	EU Method A.8 (Partition Coefficient)
2-n-butyl-benzo[d]isothiazol-3-one 4299-07-4	2,86		not specified
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	> -0,71 - 0,75	20 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
2-Dimethylaminoethanol 108-01-0	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
1,2-Benzisothiazol-3(2H)-one 2634-33-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Isothiazolinone mixture (C(M)IT/MIT (3:1)) 55965-84-9	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

In consultation with the responsible local authority, must be subjected to special treatment.

Waste code

080120

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

SECTION 14: Transport information

- 14.1. UN number or ID number**
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.2. UN proper shipping name**
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.3. Transport hazard class(es)**
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.4. Packing group**
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.5. Environmental hazards**
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.6. Special precautions for user**
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.7. Maritime transport in bulk according to IMO instruments**
not applicable

SECTION 15: Regulatory information

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

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
VOC content (2010/75/EU)	1 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Germany):

WGK:	WGK 1: slightly hazardous to water (Ordinance on facilities for handling substances that are hazardous to water (AwSV)) Classification according to AwSV, Annex 1 (5.2)
Storage class according to TRGS 510:	10

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H310 Fatal in contact with skin.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H331 Toxic if inhaled.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

ED:	Substance identified as having endocrine disrupting properties
EU OEL:	Substance with a Union workplace exposure limit
EU EXPLD 1:	Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD 2	Substance listed in Annex II, Reg (EC) No. 2019/1148
SVHC:	Substance of very high concern (REACH Candidate List)
PBT:	Substance fulfilling persistent, bioaccumulative and toxic criteria
PBT/vPvB:	Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria
vPvB:	Substance fulfilling very persistent and very bioaccumulative criteria

Further information:

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