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

SDS No. : 623998
V002.0

LOCTITE ABLESTIK ABP 8068TB

Revision: 21.05.2019
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Replaces version from: 17.07.2018

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

1.1. Product identifier
LOCTITE ABLESTIK ABP 8068TB

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use:
Die attach adhesive

1.3. Details of the supplier of the safety data sheet
Henkel Ltd
Wood Lane End
HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 1442 278000
Fax-no.: +44 1442 278071

ua-productsafety.uk@henkel.com

1.4. Emergency telephone number
24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Acute hazards to the aquatic environment	Category 1
H400 Very toxic to aquatic life.	
Chronic hazards to the aquatic environment	Category 1
H410 Very toxic to aquatic life with long lasting effects.	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:

Contains Dihydro-3-(tetrapropenyl)furan-2,5-dione

Diglycidyl hexahydrophthalate
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin

Epoxycyclohexylethyltrimethoxysilane
Maleic anhydride

Signal word:	Warning
Hazard statement:	H317 May cause an allergic skin reaction. H410 Very toxic to aquatic life with long lasting effects.
Precautionary statement: Prevention	P273 Avoid release to the environment. P280 Wear protective gloves.
Precautionary statement: Response	P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

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

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.	content	Classification
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	231-131-3 01-2119555669-21	50- 100 %	Aquatic Acute 1 H400 Aquatic Chronic 1 H410 M factor (Acute Aquat Tox): 10 M factor (Chron Aquat Tox): 10
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	247-781-6 01-2119979080-37	1- < 5 %	Skin Sens. 1A H317 Eye Irrit. 2 H319 Aquatic Chronic 4 H413
Diglycidyl hexahydrophthalate 5493-45-8	226-826-3	1- < 5 %	Skin Sens. 1 H317 Aquatic Chronic 3 H412
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	500-180-5 01-2119970551-37	1- < 5 %	Skin Sens. 1 H317
Epoxycyclohexylethyltrimethoxysilane 3388-04-3	222-217-1	0,1- < 1 %	Skin Sens. 1B H317 Muta. 2 H341 Carc. 2 H351 Aquatic Chronic 3 H412
Maleic anhydride 108-31-6	203-571-6 01-2119472428-31	0,01- < 0,1 %	Resp. Sens. 1 H334 Skin Sens. 1A H317 Acute Tox. 4; Oral H302 STOT RE 1; Inhalation H372 Skin Corr. 1B H314 Eye Dam. 1 H318

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. If symptoms persist, seek medical advice.

Skin contact:
Rinse with running water and soap.
Obtain medical attention if irritation persists.

Eye contact:
Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

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
SKIN: Rash, Urticaria.

Prolonged or repeated skin contact with silver and its salts may cause a blue-gray discoloration of the skin and mucous membranes that is irreversible (Argyria).

Prolonged or repeated contact may cause eye irritation.

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:
water, carbon dioxide, foam, powder

Extinguishing media which must not be used for safety reasons:
High pressure waterjet

5.2. Special hazards arising from the substance or mixture
In the event of a fire, carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx) can be released.
In case of fire, keep containers cool with water spray.

5.3. Advice for firefighters
Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Additional information:
In case of fire, keep containers cool with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid contact with skin and eyes.
Wear protective equipment.
Ensure adequate ventilation.

6.2. Environmental precautions
Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up
For small spills wipe up with paper towel and place in container for disposal.
For large spills absorb onto inert absorbent material and place in sealed container for disposal.
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.
See advice in section 8

Hygiene measures:
Good industrial hygiene practices should be observed.
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.
Keep container tightly sealed.
Refer to Technical Data Sheet

7.3. Specific end use(s)
Die attach adhesive

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

Ingredient [Regulated substance]	ppm	mg/m³	Value type	Short term exposure limit category / Remarks	Regulatory list
Silver 7440-22-4 [SILVER (METALLIC)]		0,1	Time Weighted Average (TWA):		EH40 WEL
Silver 7440-22-4 [SILVER, METALLIC]		0,1	Time Weighted Average (TWA):	Indicative	ECTLV
Maleic anhydride 108-31-6 [MALEIC ANHYDRIDE]		3	Short Term Exposure Limit (STEL):		EH40 WEL
Maleic anhydride 108-31-6 [MALEIC ANHYDRIDE]		1	Time Weighted Average (TWA):		EH40 WEL

Occupational Exposure Limits

Valid for
Ireland

Ingredient [Regulated substance]	ppm	mg/m³	Value type	Short term exposure limit category / Remarks	Regulatory list
Silver 7440-22-4 [SILVER (METALLIC)]		0,1	Time Weighted Average (TWA):	Indicative OELV	IR_OEL
Silver 7440-22-4 [SILVER, METALLIC]		0,1	Time Weighted Average (TWA):	Indicative	ECTLV
Maleic anhydride 108-31-6 [MALEIC ANHYDRIDE]	0,01		Time Weighted Average (TWA):		IR_OEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	aqua (freshwater)		0,00004 mg/l				
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	aqua (marine water)		0,00086 mg/l				
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	sewage treatment plant (STP)		0,025 mg/l				
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	sediment (freshwater)				438,13 mg/kg		
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	sediment (marine water)				438,13 mg/kg		
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Air						
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Soil				1,41 mg/kg		
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	aqua (freshwater)		0,02 mg/l				
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	sediment (freshwater)				1,7 mg/kg		
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	aqua (marine water)		0,002 mg/l				
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	sediment (marine water)				0,17 mg/kg		
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	aqua (intermittent releases)		0,2 mg/l				
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Soil				0,2 mg/kg		
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	sewage treatment plant (STP)		10 mg/l				
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Air						
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Predator						
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	aqua (freshwater)		0,1 mg/l				
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	sewage treatment plant (STP)		100 mg/l				
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	aqua (marine water)		0,01 mg/l				
Maleic anhydride 108-31-6	aqua (freshwater)		0,1 mg/l				
Maleic anhydride 108-31-6	aqua (marine water)		0,01 mg/l				
Maleic anhydride 108-31-6	aqua (intermittent releases)		0,4281 mg/l				
Maleic anhydride 108-31-6	Soil		0,0415 mg/l				
Maleic anhydride 108-31-6	sediment (freshwater)				0,334 mg/kg		
Maleic anhydride 108-31-6	sediment (marine water)				0,0334 mg/kg		
Maleic anhydride 108-31-6	sewage treatment plant (STP)		44,6 mg/l				

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Workers	inhalation	Long term exposure - systemic effects		0,1 mg/m3	
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	General population	inhalation	Long term exposure - systemic effects		0,04 mg/m3	
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	General population	oral	Long term exposure - systemic effects		1,2 mg/kg	
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Workers	dermal	Long term exposure - systemic effects		0,33 mg/kg	
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	Workers	inhalation	Long term exposure - systemic effects		39,2 mg/m3	
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	Workers	inhalation	Acute/short term exposure - systemic effects		39,2 mg/m3	
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	Workers	inhalation	Long term exposure - local effects		39,2 mg/m3	
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	Workers	dermal	Long term exposure - systemic effects		5,6 mg/kg	
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	Workers	dermal	Acute/short term exposure - systemic effects		5,6 mg/kg	
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	Workers	dermal	Long term exposure - local effects		0,079 mg/cm2 7,9 µg/cm2/day	
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	General population	inhalation	Long term exposure - systemic effects		23,5 mg/m3	
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	General population	inhalation	Long term exposure - local effects		23,5 mg/m3	
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	General population	dermal	Long term exposure - systemic effects		3,3 mg/kg	
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	General population	dermal	Acute/short term exposure - systemic effects		3,3 mg/kg	
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	General population	dermal	Long term exposure - local effects		0,00476 mg/cm2 4,76 µg/cm2/day	
Maleic anhydride 108-31-6	Workers	inhalation	Acute/short term exposure - systemic effects		0,8 mg/m3	
Maleic anhydride 108-31-6	Workers	inhalation	Acute/short term exposure - local effects		0,8 mg/m3	
Maleic anhydride 108-31-6	Workers	inhalation	Long term exposure - systemic effects		0,4 mg/m3	
Maleic anhydride 108-31-6	Workers	inhalation	Long term exposure - local effects		0,4 mg/m3	

Biological Exposure Indices:
None

8.2. Exposure controls:

Engineering controls:
Ensure good ventilation/extraction.

Respiratory protection:
Ensure adequate ventilation.
An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area
Filter type: A (EN 14387)

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):
nitrile rubber (NBR; >= 0.4 mm thickness)
Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 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:
Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.
Protective eye equipment should conform to EN166.

Skin protection:
Wear 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

Appearance	paste liquid silver
Odor	slightly
Odour threshold	No data available / Not applicable
pH	No data available / Not applicable
Melting point	No data available / Not applicable
Solidification temperature	No data available / Not applicable
Initial boiling point	No data available / Not applicable
Flash point	> 93 °C (> 199.4 °F)
Evaporation rate	No data available / Not applicable
Flammability	No data available / Not applicable
Explosive limits	No data available / Not applicable
Vapour pressure	No data available / Not applicable
Relative vapour density:	No data available / Not applicable
Density ()	5,6 g/cm3
Bulk density	No data available / Not applicable
Solubility	No data available / Not applicable
Solubility (qualitative) (Solvent: Water)	Insoluble
Partition coefficient: n-octanol/water	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Decomposition temperature	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable

Explosive properties	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity
Reaction with strong acids.
Reacts 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
Stable under normal conditions of storage and use.

10.5. Incompatible materials
See section reactivity.

10.6. Hazardous decomposition products
carbon oxides.

SECTION 11: Toxicological information

General toxicological information:
Prolonged or repeated contact may cause eye irritation.

11.1. Information on toxicological effects

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
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	LD50	> 2.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	LD50	2.900 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	LD50	> 2.000 mg/kg	rat	OECD Guideline 420 (Acute Oral Toxicity)
Epoxycyclohexylethyltrimethoxysilane 3388-04-3	LD50	13.000 mg/kg	rat	
Maleic anhydride 108-31-6	LD50	1.090 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)

Acute dermal toxicity:

Prolonged or repeated skin contact with silver and its salts may cause a blue-gray discoloration of the skin and mucous membranes that is irreversible (Argyria).

Hazardous substances CAS-No.	Value type	Value	Species	Method
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	LD50	6.200 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Epoxycyclohexylethyltrimethoxysilane 3388-04-3	LD50	6.700 mg/kg	rabbit	
Maleic anhydride 108-31-6	LD50	2.620 mg/kg	rabbit	not specified

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
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	LC50	5,3 mg/l	dust/mist	4 h	rat	not specified

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
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	not irritating		rabbit	other guideline:
Maleic anhydride 108-31-6	highly irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/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
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	irritating		rabbit	Evaluated according F.H.S.A.= Federal Hazardous Substance Act.
Maleic anhydride 108-31-6	corrosive		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

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

Hazardous substances CAS-No.	Result	Test type	Species	Method
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Epoxycyclohexylethyltrimethoxysilane 3388-04-3	sensitising	Buehler test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
Maleic anhydride 108-31-6	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)

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
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	negative	in vitro mammalian cell micronucleus test	with and without		OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Maleic anhydride 108-31-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Maleic anhydride 108-31-6	negative	inhalation		rat	OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test)

Carcinogenicity

No data available.

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
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	NOAEL P 50 mg/kg	screening	oral: gavage	rat	OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test)
Maleic anhydride 108-31-6	NOAEL P 55 mg/kg NOAEL F1 55 mg/kg	Two generation study	oral: gavage	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
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	NOAEL 50 mg/kg	oral: gavage	28 days	rat	EPA Guideline
Maleic anhydride 108-31-6	NOAEL 40 mg/kg	oral: feed	90 d daily	rat	not specified

Aspiration hazard:

No data available.

SECTION 12: Ecological information

General ecological information:
Do not empty into drains / surface water / ground water.

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
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	LC50	0,0012 mg/l	96 h	Pimephales promelas	other guideline:
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	EC10	0,00019 mg/l	217 d	Salmo trutta	OECD Guideline 210 (fish early lite stage toxicity test)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	LC50		96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	LC50	> 100 mg/l	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	OECD Guideline 203 (Fish, Acute Toxicity Test)
Epoxycyclohexylethyltrimethoxysilane 3388-04-3	LC50	42,3 mg/l	96 h	Cyprinus carpio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Maleic anhydride 108-31-6	LC50	115 mg/l			OECD Guideline 203 (Fish, Acute 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
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	EC50	0,00022 mg/l	48 h	Daphnia magna	other guideline:
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	EC50		48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	EC50	> 100 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Epoxycyclohexylethyltrimethoxysilane 3388-04-3	EC50	58 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Maleic anhydride 108-31-6	EC50	42,81 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
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	NOEC	0,00032 mg/l	21 d	Daphnia magna	EPA OPPTS 850.1300 (Daphnid Chronic Toxicity Test)
Epoxycyclohexylethyltrimethoxysilane 3388-04-3	NOEC	16 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
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	EC10	0,00016 mg/l	15 d	other:	other guideline:
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	EC50		96 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	NOEC		96 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	EC50	> 160 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Epoxycyclohexylethyltrimethoxysilane 3388-04-3	NOEC	6 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Epoxycyclohexylethyltrimethoxysilane 3388-04-3	EC50	90 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Maleic anhydride 108-31-6	EC50	29 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Maleic anhydride 108-31-6	EC10	23 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	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
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	EC50		3 h	activated sludge, domestic	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Epoxycyclohexylethyltrimethoxysilane 3388-04-3	EC 50	> 100 mg/l	30 min		OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Maleic anhydride 108-31-6	EC0	> 10.000 mg/l	30 min		not specified

12.2. Persistence and degradability

The product is not biodegradable.

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	not readily biodegradable.	aerobic	9,9 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0		aerobic	2 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Epoxycyclohexylethyltrimethoxysilane 3388-04-3		aerobic	28 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Maleic anhydride 108-31-6	readily biodegradable	aerobic	98 %	7 d	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)

12.3. Bioaccumulative potential

No data available.

Hazardous substances CAS-No.	Bioconcentration factor (BCF)	Exposure time	Temperature	Species	Method
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	70	42 d	20 °C	Cyprinus carpio	other guideline:

12.4. Mobility in soil

Cured adhesives are immobile.

Hazardous substances CAS-No.	LogPow	Temperature	Method
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	4,39	22 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	> 6,5	30 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Epoxycyclohexylethyltrimethoxysilane 3388-04-3	4,1	23 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Maleic anhydride 108-31-6	1,62		not specified

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A and epichlorohydrin 67989-52-0	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Maleic anhydride 108-31-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:
Do not empty into drains / surface water / ground water.
Dispose of in accordance with local and national regulations.

Disposal of uncleaned packages:
After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

Waste code

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances
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

ADR	3082
RID	3082
ADN	3082
IMDG	3082
IATA	3082

14.2. UN proper shipping name

ADR	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver)
RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver)
ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver)
IATA	Environmentally hazardous substance, liquid, n.o.s. (Silver)

14.3. Transport hazard class(es)

ADR	9
RID	9
ADN	9
IMDG	9
IATA	9

14.4. Packing group

ADR	III
RID	III
ADN	III
IMDG	III
IATA	III

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	Marine pollutant
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable Tunnelcode:
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

The transport classifications in this section apply generally to packed and bulk goods alike. For containers with a net volume of no more than 5 L for liquid substances or a net mass of no more than 5 kg for solid substances per individual or inner package, the exemptions SP 375 (ADR), 197 (IATA), 969 (IMDG) may be applied, which can result in a deviation from the transport classification for packed goods.

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

not applicable

SECTION 15: Regulatory information

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

VOC content (2010/75/EC)	< 3 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

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:

H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
H413 May cause long lasting harmful effects to aquatic life.

Further information:

This Safety Data Sheet has been produced for sales from Henkel to parties purchasing from Henkel, is based on Regulation (EC) No 1907/2006 and provides information in accordance with applicable regulations of the European Union only. In that respect, no statement, warranty or representation of any kind is given as to compliance with any statutory laws or regulations of any other jurisdiction or territory other than the European Union. When exporting to territories other than the European Union, please consult with the respective Safety Data Sheet of the concerned territory to ensure compliance or liaise with Henkel´s Product Safety and Regulatory Affairs Department (ua-productsafety.de@henkel.com) prior to export to other territories than the European Union.

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.