LOCTITE ABLESTIK ABP 6395T

SDS No. : 729113
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Section 1. Identification of the substance/preparation and of the company/undertaking

Product name:
LOCTITE ABLESTIK ABP 6395T

Other means of identification:
LOCTITE ABLESTIK ABP 6395T

Product code:
IDH2872774

Recommended use of the chemical and restrictions on use

Intended use:
Adhesive

Manufacturer/Importer/Distributor Representative Company

Henkel Thailand Ltd. The Offices at Centralworld,
35th Floor, 999/9 Rama 1 Rd.,
Kwang Patumwan, Khet Patumwan,
10330 Bangkok

Thailand

Phone: +66 (2209) 8000
Fax-no.: +66 (2209) 8008

E-mail address of person responsible for Safety Data Sheet:
ap-ua-psra.sea@henkel.com

Emergency Telephone for Chemical Accidents:
FOR EMERGENCIES ONLY (Spill, major leak, Fire, Exposure, or Accident). Call: +662 209 8008

Section 2. Hazards identification

GHS Classification:

Hazard Class	Hazard Category	Target organ
Skin sensitizer	Category 1	
Germ cell mutagenicity	Category 2	
Carcinogenicity	Category 1B	
Toxic to reproduction	Category 2	
Specific target organ toxicity - repeated exposure	Category 2	Nervous system
Acute hazards to the aquatic environment	Category 1	
Chronic hazards to the aquatic environment	Category 1	

GHS label elements:

Hazard pictogram:



Signal word:
Danger

Hazard statement:
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H361 Suspected of damaging fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precaution:

Prevention:
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:
P302+P352 IF ON SKIN: Wash with plenty of water.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Disposal:
P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Section 3. Composition / information on ingredients

Substance or Mixture:
Mixture

Declaration of hazardous chemical:

Hazard component CAS-No.	Content	GHS Classification
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	60- 100 %	Toxic to reproduction 2 H361 Specific target organ toxicity - repeated exposure 2 H373 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	1- 10 %	Acute toxicity 5; Oral H303 Acute toxicity 5; Inhalation H333 Serious eye damage/eye irritation 2A H319 Skin sensitizer 1A H317 Specific target organ toxicity - repeated exposure 2 H373 Chronic hazards to the aquatic environment 4 H413
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	1- 10 %	Serious eye damage/eye irritation 2A H319 Acute hazards to the aquatic environment 3 H402
Phenol, polymer with 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene, glycidyl ether 119345-05-0	1- 10 %	Skin sensitizer 1B H317 Germ cell mutagenicity 2 H341 Chronic hazards to the aquatic environment 4 H413
resorcinol diglycidyl ether 101-90-6	0.1- 1 %	Acute toxicity 4; Oral H302 Acute toxicity 3; Dermal H311 Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A H319 Skin sensitizer 1 H317 Germ cell mutagenicity 2 H341 Carcinogenicity 1B; Inhalation H350 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin 68475-94-5	0.1- 1 %	Acute toxicity 5; Oral H303 Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A H319 Skin sensitizer 1 H317 Specific target organ toxicity - single exposure 3 H335 Chronic hazards to the aquatic environment 4 H413
6-glycidyloxynapht-1-yl oxymethyloxirane 27610-48-6	0.1- 1 %	Acute toxicity 5; Oral H303 Acute toxicity 4; Dermal H312 Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A

		H319 Skin sensitizer 1 H317 Germ cell mutagenicity 2 H341 Acute hazards to the aquatic environment 3 H402 Chronic hazards to the aquatic environment 3 H412
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	0.1- 1 %	Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A H319 Skin sensitizer 1 H317 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	0.1- 1 %	Skin sensitizer 1B H317 Germ cell mutagenicity 2 H341 Carcinogenicity 2 H351 Acute hazards to the aquatic environment 3 H402 Chronic hazards to the aquatic environment 3 H412
maleic anhydride 108-31-6	< 0.1 %	Acute toxicity 4; Oral H302 Acute toxicity 5; Dermal H313 Skin corrosion/irritation 1 H314 Serious eye damage/eye irritation 1 H318 Respiratory sensitizer 1 H334 Skin sensitizer 1A H317 Specific target organ toxicity - repeated exposure 1; Inhalation H372 Acute hazards to the aquatic environment 3 H402

Section 4. 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.

Section 5. Fire fighting measures

Suitable extinguishing media:
water, carbon dioxide, foam, powder

Improper extinguishing media:
High pressure waterjet

Specific hazards arising from the chemical:
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.

Special protection equipment and precautions for firefighters:
Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Section 6. Accidental release measures

Personal precautions:
Avoid contact with skin and eyes.
Wear protective equipment.
Ensure adequate ventilation.

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

Clean-up methods:
Dispose of contaminated material as waste according to Section 13.
Scrape up as much material as possible.
Sweep up spilled material. Avoid creating dust.
Store in a partly filled, closed container until disposal.

Section 7. Handling and storage

Handling:
Avoid skin and eye contact.
See advice in section 8

Storage:
Protect from direct sunlight.
Keep container tightly sealed.
Refer to Technical Data Sheet.

Section 8. Exposure controls / personal protection

Components with specific control parameters for workplace:

Silver, metal, dust and fume 7440-22-4	**Value type**	Time Weighted Average (TWA):
	mg/m³	0.1
	Remarks	ACGIH
MALEIC ANHYDRIDE, INHALABLE FRACTION AND VAPOR 108-31-6	**Value type**	Time Weighted Average (TWA):
	mg/m³	0.01
	Remarks	ACGIH

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
Dust mask, P2 particle filter.

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.

Body protection:
Wear suitable protective clothing.
Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Engineering controls:
Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

General protection and hygiene measures:
The workplace should be equipped with an emergency shower and eye-rinsing facility.

Hygienic measures:
Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.
Take off contaminated clothing and wash before reuse.

Section 9. Physical and chemical properties

Appearance:	Silver solid, paste
Odor:	neutral
Odor threshold (CA):	No data available.
pH:	Not applicable, Product is non-soluble (in water).
Melting point / freezing point:	No data available.
Specific gravity:	4

Boiling point:	No data available.
Flash point:	> 93 °C (> 199.4 °F)
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Lower explosive limit:	No data available.
Upper explosive limit:	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Density:	4 g/cm3
Solubility:	No data available.
Partition coefficient: n-octanol/water:	No data available.
Auto ignition:	No data available.
Decomposition temperature:	No data available.
Viscosity:	0 - 99,999 cp (; speed of rotation: 0.5 min-1; Method: no method / method unknown)

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

Section 10. Stability and reactivity

Reactivity/Incompatible materials:
Reacts with strong oxidants.
Reaction with strong acids.
Chemical stability:
Stable under recommended storage conditions.
Conditions to avoid:
Stable under normal conditions of storage and use.
Hazardous decomposition products:
carbon oxides.

Section 11. Toxicological information

Dermal toxicity:	Acute toxicity estimate (ATE) : > 2,000 mg/kg Method: Calculation method

Health Effects:
Skin: May cause an allergic skin reaction.
Symptoms of Overexposure**:** None known.

Acute oral toxicity:

Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Value type	LD50
	Value	2,900 mg/kg
	Species	rat
	Method	OECD Guideline 423 (Acute Oral toxicity)
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Value type	LD50
	Value	11,920 mg/kg
	Species	rat
	Method	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
Phenol, polymer with 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene, glycidyl ether 119345-05-0	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	not specified
resorcinol diglycidyl ether 101-90-6	Value type	Acute toxicity estimate (ATE)
	Value	500 mg/kg
	Species	
	Method	Expert judgement
Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin 68475-94-5	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 420 (Acute Oral Toxicity)
Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin 68475-94-5	Value type	Acute toxicity estimate (ATE)
	Value	2,500 mg/kg
	Species	
	Method	Expert judgement
6-glycidyloxynapht-1-yl oxymethyloxirane 27610-48-6	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	EPA OTS 798.1175 (Acute Oral Toxicity)
6-glycidyloxynapht-1-yl oxymethyloxirane 27610-48-6	Value type	Acute toxicity estimate (ATE)
	Value	2,500 mg/kg
	Species	
	Method	Expert judgement
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 420 (Acute Oral Toxicity)
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Value type	LD50
	Value	13,000 mg/kg
	Species	rat
	Method	not specified
maleic anhydride 108-31-6	Value type	LD50
	Value	1,090 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)

Acute inhalative toxicity:

Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Value type	LC50
	Value	5.3 mg/l
	Exposure time	4 h
	Species	rat
	Method	not specified
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Value type	LC50
	Value	72.5 mg/l
	Exposure time	4 h
	Species	rat
	Method	not specified

Acute dermal toxicity:

Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Value type	LD50
	Value	6,200 mg/kg
	Species	rabbit
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Value type	LD50
	Value	5,400 mg/kg
	Species	rabbit
	Method	equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity)
resorcinol diglycidyl ether 101-90-6	Value type	Acute toxicity estimate (ATE)
	Value	300 mg/kg
	Species	
	Method	Expert judgement
Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin 68475-94-5	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
6-glycidyloxynapht-1-yl oxymethyloxirane 27610-48-6	Value type	LD50
	Value	> 1,000 - < 2,000 mg/kg
	Species	rat
	Method	EPA OTS 798.1100 (Acute Dermal Toxicity)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Value type	LD50
	Value	6,700 mg/kg
	Species	rabbit
	Method	not specified
maleic anhydride 108-31-6	Value type	LD50
	Value	2,620 mg/kg
	Species	rabbit
	Method	not specified

Skin corrosion/irritation:

Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	other guideline:
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Result	not irritating
	Exposure time	24 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin	Result	irritating
	Exposure time	

68475-94-5	Species	rabbit
	Method	not specified
6-glycidyloxynapht-1-yl oxymethyloxirane 27610-48-6	Result	irritating
	Exposure time	
	Species	rabbit
	Method	EPA OTS 798.4470 (Acute Dermal Irritation)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	irritating
	Exposure time	
	Species	
	Method	Weight of evidence
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Result	not irritating
	Exposure time	4 h
	Species	rabbit
	Method	equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
maleic anhydride 108-31-6	Result	highly irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Result	irritating
	Exposure time	
	Species	rabbit
	Method	Evaluated according F.H.S.A.= Federal Hazardous Substance Act.
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Result	Category 2A (irritating to eyes)
	Exposure time	2 h
	Species	Human, in vitro, reconstituted human corneal model
	Method	OECD Guideline 492 (Reconstructed Human Cornea-like Epithelium (RhCE) Test Method)
Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin 68475-94-5	Result	irritating
	Exposure time	
	Species	rabbit
	Method	not specified
6-glycidyloxynapht-1-yl oxymethyloxirane 27610-48-6	Result	irritating
	Exposure time	
	Species	rabbit
	Method	EPA OTS 798.4500 (Acute Eye Irritation)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	irritating
	Exposure time	
	Species	
	Method	Weight of evidence
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	equivalent or similar to OECD Guideline 405 (Acute Eye Irritation / Corrosion)
maleic anhydride 108-31-6	Result	corrosive
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Result	sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Result	not sensitising
	Test type	Buehler test
	Species	guinea pig
	Method	EU Method B.6 (Skin Sensitisation)
Phenol, polymer with 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene, glycidyl ether 119345-05-0	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin 68475-94-5	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
6-glycidyloxynapht-1-yl oxymethyloxirane 27610-48-6	Result	sensitising
	Test type	Buehler test
	Species	guinea pig
	Method	EPA OTS 798.4100 (Skin Sensitisation)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Result	sensitising
	Test type	Buehler test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
maleic anhydride 108-31-6	Result	sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Result	negative
	Type of study / Route of administration	in vitro mammalian cell micronucleus test
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Result	negative
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	with and without
	Method	equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Result	negative
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with and without
	Method	equivalent or similar to OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Phenol, polymer with 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene, glycidyl ether 119345-05-0	Result	positive
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Phenol, polymer with 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene, glycidyl ether 119345-05-0	Result	positive
	Type of study / Route of administration	oral: unspecified
	Metabolic activation / Exposure time	
	Species	mouse
	Method	not specified
resorcinol diglycidyl ether 101-90-6	Result	positive
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	not specified
6-glycidyloxynapht-1-yl oxymethyloxirane 27610-48-6	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	with
	Method	OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
6-glycidyloxynapht-1-yl oxymethyloxirane 27610-48-6	Result	positive
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	without
	Method	OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
6-glycidyloxynapht-1-yl oxymethyloxirane 27610-48-6	Result	positive
	Type of study / Route of administration	intraperitoneal
	Metabolic activation / Exposure time	
	Species	mouse
	Method	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 472 (Genetic Toxicology: Escherichia coli, Reverse Mutation Assay)

25068-38-6		
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	mouse
	Method	not specified
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Result	positive
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with and without
	Method	equivalent or similar to OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Result	positive
	Type of study / Route of administration	sister chromatid exchange assay in mammalian cells
	Metabolic activation / Exposure time	with and without
	Method	EU Method B.19 (Sister Chromatid Exchange Assay In Vitro)
maleic anhydride 108-31-6	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
maleic anhydride 108-31-6	Result	negative
	Type of study / Route of administration	inhalation
	Metabolic activation / Exposure time	
	Species	rat
	Method	OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test)

Repeated dose toxicity:

Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Result	NOAEL=50 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	28 days
	Species	rat
	Method	EPA Guideline
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Result	NOAEL=250 mg/kg
	Route of application	oral: drinking water
	Exposure time / Frequency of treatment	90 ddaily
	Species	rat
	Method	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	NOAEL=50 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	14 wdaily
	Species	rat
	Method	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
maleic anhydride 108-31-6	Result	NOAEL=40 mg/kg
	Route of application	oral: feed
	Exposure time / Frequency of treatment	90 ddaily
	Species	rat
	Method	not specified

Section 12. Ecological information

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

Ecotoxicity: H410 Very toxic to aquatic life with long lasting effects.

Toxicity:

Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Value type	LC50
	Value	0.0012 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Pimephales promelas
	Method	other guideline:
	Value type	EC10
	Value	0.00019 mg/l
	Acute Toxicity Study	Fish
	Exposure time	217 d
	Species	Salmo trutta
	Method	OECD Guideline 210 (fish early lite stage toxicity test)
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Value type	EC50
	Value	0.00022 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	other guideline:
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Value type	EC10
	Value	0.00016 mg/l
	Acute Toxicity Study	Algae
	Exposure time	15 d
	Species	other:
	Method	other guideline:
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Value type	LC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Value type	EC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Value type	EC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Algae
	Exposure time	96 h
	Species	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Algae
	Exposure time	96 h
	Species	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Value type	EC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge, domestic
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Value type	LC50
	Value	50 - 70 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Brachydanio rerio (new name: Danio rerio)
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Value type	EC50
	Value	665 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna

	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Value type	EC0
	Value	1,575 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	30 min
	Species	
	Method	not specified
Phenol, polymer with 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene, glycidyl ether 119345-05-0	Value type	EC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Phenol, polymer with 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene, glycidyl ether 119345-05-0	Value type	EC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
resorcinol diglycidyl ether 101-90-6	Value type	LC50
	Value	5.8 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
resorcinol diglycidyl ether 101-90-6	Value type	EC50
	Value	6 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
resorcinol diglycidyl ether 101-90-6	Value type	EC50
	Value	4.5 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	0.28 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
resorcinol diglycidyl ether 101-90-6	Value type	EC50
	Value	640 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge of a predominantly domestic sewage
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin 68475-94-5	Value type	LL50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin 68475-94-5	Value type	EL50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin 68475-94-5	Value type	EL50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOELR
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Algae

	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Value type	LC50
	Value	1.75 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Value type	EC50
	Value	1.7 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Value type	EC50
	Value	> 11 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus capricornutum
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	4.2 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus capricornutum
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Value type	IC50
	Value	> 100 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge, industrial
	Method	other guideline:
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Value type	LC50
	Value	42.3 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Cyprinus carpio
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Value type	EC50
	Value	58 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Value type	NOEC
	Value	6 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC50
	Value	90 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Value type	EC50
	Value	> 100 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	30 min
	Species	
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
maleic anhydride 108-31-6	Value type	LC50
	Value	75 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Lepomis macrochirus
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)

maleic anhydride 108-31-6	Value type	EC50
	Value	77 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
maleic anhydride 108-31-6	Value type	EC50
	Value	29 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC10
	Value	23 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
maleic anhydride 108-31-6	Value type	EC10
	Value	44.6 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	
	Species	Pseudomonas putida
	Method	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)

Persistence and degradability:

Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	9.9 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	Result	
	Route of application	aerobic
	Degradability	> 90 %
	Method	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
	Result	readily biodegradable
	Route of application	aerobic
	Degradability	100 %
	Method	EU Method C.4-E (Determination of the "Ready" BiodegradabilityClosed Bottle Test)
Phenol, polymer with 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene, glycidyl ether 119345-05-0	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	2 %
	Method	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
resorcinol diglycidyl ether 101-90-6	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	7 %
	Method	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin 68475-94-5	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	28 %
	Method	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	5 %
	Method	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	Result	
	Route of application	aerobic
	Degradability	28 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
maleic anhydride 108-31-6	Result	readily biodegradable
	Route of application	aerobic
	Degradability	98 %
	Method	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)

Bioaccumulative potential / Mobility in soil:

Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Bioconcentration factor (BCF)	70
	Exposure time	42 d
	Species	Cyprinus carpio
	Temperature	20 °C
	Method	other guideline:
Dihydro-3-(tetrapropenyl)furan-2,5-dione 26544-38-7	LogPow	4.39
	Temperature	22 °C
	Method	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
2-(2-Butoxyethoxy)ethyl acetate 124-17-4	LogPow	1.3
	Temperature	
	Method	not specified
Phenol, polymer with 3a,4,7,7a-tetrahydro-4,7-methano-1H-indene, glycidyl ether 119345-05-0	LogPow	> 6.20 - 6.37
	Temperature	
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
resorcinol diglycidyl ether 101-90-6	LogPow	1.46
	Temperature	30 °C
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Fatty acids, C18-unsatd., dimers, polymers with epichlorohydrin 68475-94-5	LogPow	> 6.5
	Temperature	20 °C
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	LogPow	3.242
	Temperature	25 °C
	Method	EU Method A.8 (Partition Coefficient)
2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane 3388-04-3	LogPow	4.1
	Temperature	23 °C
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
maleic anhydride 108-31-6	LogPow	-2.61
	Temperature	19.8 °C
	Method	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

Section 13. Disposal considerations

Product

Method of disposal:
Dispose of in accordance with local and national regulations.

Packaging

Disposal of uncleaned packages:
Packaging that cannot be cleaned are to be disposed of in the same manner as the product.

Section 14. Transport information

Road transport ADR:

Class:	9
Packing group:	III
Classification code:	M7
Hazard ident. number:	90
UN no.:	3077
Label:	9
Technical name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver)

Railroad transport RID:

Class:	9
Packing group:	III
Classification code:	M7
Hazard ident. number:	90
UN no.:	3077
Label:	9
Technical name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver)

Inland water transport ADN:

Class:	9
Packing group:	III
Classification code:	M7
Hazard ident. number:	90
UN no.:	3077
Label:	9
Technical name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver)

Marine transport IMDG:

Class:	9
Packing group:	III
UN no.:	3077
Label:	9
EmS:	F-A ,S-F
Seawater pollutant:	Marine pollutant
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver)

Air transport IATA:

Class:	9
Packing group:	III
Packaging instructions (passenger):	956
Packaging instructions (cargo):	956
UN no.:	3077
Label:	9
Proper shipping name:	Environmentally hazardous substance, solid, n.o.s. (Silver)

Further information for transport:

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), A197 (IATA), 2.10.2.7 (IMDG), NZ 4.3(10) may be applied, which can result in a deviation from the transport classification for packed goods.

Section 15. Regulatory information

Regulatory Information:
Ministry of Industry Notice. The system to classify and communicate the hazard of hazardous material, BE. 2555

Global inventory status:

Regulatory list	Notification
TCSI	yes
TSCA	yes
ENCS (JP)	yes
ISHL (JP)	yes
IECSC	yes

Section 16. Other information

Disclaimer:
This Safety Data Sheet has been generated based on Ministry of Industry Notice. The system to classify and communicate the hazard of hazardous material, BE. 2555 only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.
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.
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