Section 1. Identification of the substance/preparation and of the company/undertaking

Product name:
LOCTITE ABLESTIK CE 3513 BULK

Other means of identification:
LOCTITE ABLESTIK CE 3513 BULK

Product code:
IDH1336818

Recommended use of the chemical and restrictions on use

Intended use:
Epoxy 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
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitizer	Category 1
Germ cell mutagenicity	Category 2
Toxic to reproduction	Category 1B
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:
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H341 Suspected of causing genetic defects.
H360 May damage fertility or the unborn child.
H410 Very toxic to aquatic life with long lasting effects.

Precaution:

Prevention:
P201 Obtain special instructions before use.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
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.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: 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
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	10- 30 %	Skin corrosion/irritation 2 H315 Skin sensitizer 1A H317 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	1- 10 %	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-Epoxypropyl neodecanoate 26761-45-5	1- 10 %	Skin sensitizer 1A H317 Germ cell mutagenicity 2 H341 Toxic to reproduction 2 H361 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
Trimethylolpropane triglycidyl ether 30499-70-8	1- 10 %	Acute toxicity 5; Oral H303 Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 1 H318 Skin sensitizer 1 H317 Germ cell mutagenicity 2 H341 Toxic to reproduction 1B H360 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
Phenol, 4,4′-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, N1,N1-diethyl-1,3-propanediamine and 1-piperazineethanamine 68698-70-4	0.1- 1 %	Acute toxicity 4; Oral H302 Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A H319 Skin sensitizer 1 H317 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410
Formaldehyde polymer with phenol 9003-35-4	0.1- 1 %	Acute toxicity 5; Dermal H313 Serious eye damage/eye irritation 2A

		H319 Skin sensitizer 1 H317

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:
Ensure good ventilation/extraction.
Keep container tightly sealed.
Refer to Technical Data Sheet.
Protect from direct sunlight.

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

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 paste
Odor:	Mild
Odor threshold (CA):	No data available.
pH:	Not applicable, Product is non-soluble (in water).
Melting point / freezing point:	> 200 °C (> 392 °F)
Specific gravity:	3.5
Boiling point:	> 300 °C (> 572 °F)
Flash point:	> 100 °C (> 212 °F)
Evaporation rate:	No data available.
Flammability (solid, gas):	The product is not flammable.
Lower explosive limit:	No data available.
Upper explosive limit:	No data available.
Vapor pressure: (; 20 °C (68 °F))	< 0.1 hPa
Vapor density:	Not applicable, Product is a solid
Density:	3.5 g/cm3
Solubility:	No data available.
Partition coefficient: n-octanol/water:	No data available.
Auto ignition:	No data available.
Decomposition temperature:	> 150 °C
Viscosity:	No data available.
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

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)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	equivalent or similar to OECD Guideline 401 (Acute Oral 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 420 (Acute Oral Toxicity)
2,3-Epoxypropyl neodecanoate 26761-45-5	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 420 (Acute Oral Toxicity)
Trimethylolpropane triglycidyl ether 30499-70-8	Value type	LD50
	Value	3,398 mg/kg
	Species	rat
	Method	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
Phenol, 4,4′-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, N1,N1-diethyl-1,3-propanediamine and 1-piperazineethanamine 68698-70-4	Value type	LD50
	Value	> 300 - < 1,000 mg/kg
	Species	rat
	Method	OECD Guideline 423 (Acute Oral toxicity)
Phenol, 4,4′-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, N1,N1-diethyl-1,3-propanediamine and 1-piperazineethanamine 68698-70-4	Value type	Acute toxicity estimate (ATE)
	Value	500 mg/kg
	Species	
	Method	Expert judgement
Formaldehyde polymer with phenol 9003-35-4	Value type	LD50
	Value	> 5,000 mg/kg
	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)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	equivalent or similar to OECD Guideline 402 (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-Epoxypropyl neodecanoate 26761-45-5	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
Trimethylolpropane triglycidyl ether 30499-70-8	Value type	LD50
	Value	> 3,170 mg/kg
	Species	rat
	Method	equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity)
Formaldehyde polymer with phenol 9003-35-4	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	not specified
Formaldehyde polymer with phenol 9003-35-4	Value type	Acute toxicity estimate (ATE)
	Value	2,500 mg/kg
	Species	
	Method	Expert judgement

Skin corrosion/irritation:

Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	irritating
	Exposure time	4 h
	Species	rabbit
	Method	equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
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-Epoxypropyl neodecanoate 26761-45-5	Result	not irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Trimethylolpropane triglycidyl ether 30499-70-8	Result	not corrosive
	Exposure time	
	Species	Human, EpiDermTM SIT (EPI-200), Reconstructed Human Epidermis (RHE)
	Method	OECD Guideline 431 (In Vitro Skin Corrosion: Reconstructed Human Epidermis (RHE) Test Method)
Phenol, 4,4′-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, N1,N1-diethyl-1,3-propanediamine and 1-piperazineethanamine 68698-70-4	Result	
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Formaldehyde polymer with phenol 9003-35-4	Result	not irritating
	Exposure time	
	Species	Human, EpiDermTM SIT (EPI-200), Reconstructed Human Epidermis (RHE)
	Method	OECD Guideline 439 (In Vitro Skin Irritation: Reconstructed Human Epidermis (RHE) Test Method)

Serious eye damage/irritation:

Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	equivalent or similar to OECD Guideline 405 (Acute Eye Irritation / Corrosion)
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-Epoxypropyl neodecanoate 26761-45-5	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Trimethylolpropane triglycidyl ether 30499-70-8	Result	corrosive
	Exposure time	
	Species	rabbit
	Method	other guideline:
Phenol, 4,4′-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, N1,N1-diethyl-1,3-propanediamine and 1-piperazineethanamine 68698-70-4	Result	no prediction can be made
	Exposure time	
	Species	Bovine, cornea, in vitro test
	Method	OECD Guideline 437 (BCOP)
Formaldehyde polymer with phenol 9003-35-4	Result	irritating
	Exposure time	
	Species	
	Method	Weight of evidence

Respiratory or skin sensitization:

Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	Sub-Category 1A (sensitising)
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
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-Epoxypropyl neodecanoate 26761-45-5	Result	Sub-Category 1A (sensitising)
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	Magnusson and Kligman Method
Trimethylolpropane triglycidyl ether 30499-70-8	Result	sensitising
	Test type	Maurer optimisation test
	Species	guinea pig
	Method	Maurer Optimisation Test
Formaldehyde polymer with phenol 9003-35-4	Result	sensitising
	Test type	
	Species	human
	Method	Patch Test

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)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	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)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	mouse
	Method	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	rat
	Method	OECD Guideline 486 (Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells in vivo)
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	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)
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-Epoxypropyl neodecanoate 26761-45-5	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)
2,3-Epoxypropyl neodecanoate 26761-45-5	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)
2,3-Epoxypropyl neodecanoate 26761-45-5	Result	negative
	Type of study / Route of administration	yeast cytogenetic assay
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 481 (Genetic Toxicology: Saccharomyces cerevisiae, Mitotic Recombination Assay)
2,3-Epoxypropyl neodecanoate 26761-45-5	Result	positive
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	mouse
	Method	OECD Guideline 488 (In Vivo Transgenic Cell Gene Mutation Assays)
Trimethylolpropane triglycidyl ether 30499-70-8	Result	positive
	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)
Trimethylolpropane triglycidyl ether 30499-70-8	Result	positive
	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)
Trimethylolpropane triglycidyl ether 30499-70-8	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)
Trimethylolpropane triglycidyl	Result	positive

ether 30499-70-8	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	rat
	Method	OECD Guideline 489 (In Vivo Mammalian Alkaline Comet Assay)
Phenol, 4,4′-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, N1,N1-diethyl-1,3-propanediamine and 1-piperazineethanamine 68698-70-4	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Formaldehyde polymer with phenol 9003-35-4	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Formaldehyde polymer with phenol 9003-35-4	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	with and without
	Method	not specified

Repeated dose toxicity:

Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	NOAEL=250 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	13 wdaily
	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)
Trimethylolpropane triglycidyl ether 30499-70-8	Result	NOAEL=270 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	90 ddaily
	Species	rat
	Method	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Formaldehyde polymer with phenol 9003-35-4	Result	NOAEL=1,000 mg/kg
	Route of application	oral: feed
	Exposure time / Frequency of treatment	2 yearsdaily
	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:
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Value type	LC50
	Value	5.7 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Leuciscus idus
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Value type	EC50
	Value	2.55 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Value type	EC50
	Value	1.8 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Value type	IC50
	Value	> 100 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge, industrial
	Method	other guideline:
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	Value type	IC50
	Value	> 100 mg/l

1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge, industrial
	Method	other guideline:
2,3-Epoxypropyl neodecanoate 26761-45-5	Value type	LC50
	Value	9.61 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	EPA OTS 797.1400 (Fish Acute Toxicity Test)
2,3-Epoxypropyl neodecanoate 26761-45-5	Value type	EC50
	Value	4.8 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2,3-Epoxypropyl neodecanoate 26761-45-5	Value type	NOEC
	Value	1 mg/l
	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	EC50
	Value	2.9 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
2,3-Epoxypropyl neodecanoate 26761-45-5	Value type	EC50
	Value	> 100 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	
	Species	
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Trimethylolpropane triglycidyl ether 30499-70-8	Value type	LC50
	Value	75 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Cyprinus carpio
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Trimethylolpropane triglycidyl ether 30499-70-8	Value type	EC50
	Value	3.7 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Trimethylolpropane triglycidyl ether 30499-70-8	Value type	EC50
	Value	9 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	2.5 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Phenol, 4,4′-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, N1,N1-diethyl-1,3-propanediamine and 1-piperazineethanamine 68698-70-4	Value type	EC50
	Value	11.4 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Phenol, 4,4′-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, N1,N1-diethyl-1,3-propanediamine and 1-piperazineethanamine 68698-70-4	Value type	EC50
	Value	0.13 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Raphidocelis subcapitata (new name: Pseudokirchneriella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)

	Value type	EC10
	Value	0.062 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Raphidocelis subcapitata (new name: Pseudokirchneriella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Formaldehyde polymer with phenol 9003-35-4	Value type	LC50
	Value	185 mg/l
	Acute Toxicity Study	Fish
	Exposure time	48 h
	Species	Oncorhynchus mykiss
	Method	other guideline:
Formaldehyde polymer with phenol 9003-35-4	Value type	EC50
	Value	172 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia pulex
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Formaldehyde polymer with phenol 9003-35-4	Value type	EC50
	Value	575 mg/l
	Acute Toxicity Study	Algae
	Exposure time	24 h
	Species	Desmodesmus subspicatus
	Method	other guideline:

Persistence and degradability:

Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	0 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle 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-Epoxypropyl neodecanoate 26761-45-5	Result	under test conditions no biodegradation observed
	Route of application	aerobic
	Degradability	7 - 8 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Trimethylolpropane triglycidyl ether 30499-70-8	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	8 %
	Method	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
	Result	not inherently biodegradable
	Route of application	aerobic
	Degradability	25 %
	Method	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
Phenol, 4,4′-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, N1,N1-diethyl-1,3-propanediamine and 1-piperazineethanamine 68698-70-4	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	8.3 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Formaldehyde polymer with phenol 9003-35-4	Result	readily biodegradable
	Route of application	aerobic
	Degradability	> 60 %
	Method	ISO DIS 9408 (Ultimate Aerobic BiodegradabilityMethod by Determining the Oxygen Demand in a Closed Respirometer)

Bioaccumulative potential / Mobility in soil:

Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment	Bioconcentration factor (BCF)	70
	Exposure time	42 d
	Species	Cyprinus carpio

7440-22-4	Temperature	20 °C
	Method	other guideline:
Reaction mass bisphenol-F-(epichlorhydrin) 9003-36-5	LogPow	2.7 - 3.6
	Temperature	
	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-Epoxypropyl neodecanoate 26761-45-5	LogPow	4.4
	Temperature	20 °C
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Trimethylolpropane triglycidyl ether 30499-70-8	LogPow	< 3
	Temperature	
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Phenol, 4,4′-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, N1,N1-diethyl-1,3-propanediamine and 1-piperazineethanamine 68698-70-4	LogPow	4.39
	Temperature	25 °C
	Method	QSAR (Quantitative Structure Activity Relationship)

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
KECI (KR)	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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