



Safety Data Sheet

Page 1 of 17

LOCTITE EDAG 5915 1KGK E&C

SDS No. : 326078

V001.7

Revision: 08.04.2026

printing date: 09.04.2026

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

Product name: LOCTITE EDAG 5915 1KGK E&C

Other means of identification: LOCTITE EDAG 5915 1KGK E&C

Product code: IDH2447164

Recommended use of the chemical and restrictions on use

Intended use: Conductive dry film product

Manufacturer/Importer/Distributor Representative Company

Henkel Adhesive Tech. Vietnam Co., Ltd,
No. 7, Road 9A Bien Hoa II Industrial Zone,
Bien Hoa City,
810000 Dong Nai Province

Vietnam

Phone: +84 (28) 7100 6301

Fax-no.: +84 (28) 7100 6300

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: +84 28 71006388

Section 2. Hazards identification

GHS Classification:

<u>Hazard Class</u>	<u>Hazard Category</u>
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitizer	Category 1
Acute hazards to the aquatic environment	Category 1
Chronic hazards to the aquatic environment	Category 1

GHS label elements:

Hazard pictogram:



Signal word:

Warning

Hazard statement: H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precaution:

Prevention: 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.
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 $\geq 99,9$ % Ag as powder ($>100\text{nm}<1\text{mm}$) classified for environment 7440-22-4	30- 60 %	Reproductive toxicant. 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
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 25068-38-6	10- 30 %	Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A H319 Skin Sensitization 1 H317 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
Reaction mass of 2-[[[2-(2-aminoethyl)amino]ethyl]amino]carbonyl]-benzoic acid and 2,2'-[iminobis(2,1-ethanediyiminocarbonyl)]bis- benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25- dodecahydrodibenzo[i,t] [1,4,7,12,15,18] hexaazacyclodocosine-5,13,18,26(6H,19H)- tetrone	1- 10 %	Acute toxicity 4; Oral H302 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
2-(2-Ethoxyethoxy)ethyl acetate 112-15-2	1- 10 %	Serious eye damage/eye irritation 2A H319
2,2'-iminodiethylamine 111-40-0	0.1- 1 %	Acute toxicity 4; Oral H302 Acute toxicity 2; Inhalation H330 Acute toxicity 4; Dermal H312 Skin corrosion/irritation 1B H314 Serious eye damage/eye irritation 1 H318 Skin Sensitization 1B H317 Target Organ Systemic Toxicant - Single exposure 3 H335 Acute hazards to the aquatic environment 3 H402

Section 4. First aid measures**Inhalation:**

Move to fresh air.
In case of adverse health effects seek medical advice.

Skin contact:

Rinse with running water and soap. Apply replenishing cream. Change all contaminated clothing.
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 out mouth, drink 1-2 glasses of water, do not induce vomiting.

Section 5. Fire fighting measures

Suitable extinguishing media:	Carbon dioxide, foam, powder Water spray jet
Improper extinguishing media:	High pressure waterjet
Specific hazards arising from the chemical:	The product may undergo spontaneous polymerization at high temperatures. Polymerization is exothermic and may cause damage to the container and/or release of thermal decomposition products. Formation of toxic gases is possible during heating or in fires. 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:	Danger of slipping on spilled product. Ensure adequate ventilation. Avoid skin and eye contact. See advice in section 8
Environmental precautions:	Do not empty into drains / surface water / ground water.
Clean-up methods:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Dispose of contaminated material as waste according to Section 13.

Section 7. Handling and storage

Handling:	Avoid skin and eye contact. Use only with adequate ventilation. See advice in section 8
Storage:	Store in sealed original container. Store in a cool, well-ventilated place. Keep away from heat and direct sunlight. Refer to Technical Data Sheet.

Section 8. Exposure controls / personal protection

Components with specific control parameters for workplace:

Silver and soluble compounds 7440-22-4	Value type	Short-term exposure limit (STEL):
	mg/m³	0.1
	Remarks	VN OEL
Silver, metal, dust and fume 7440-22-4	Value type	Time Weighted Average (TWA):
	mg/m³	0.1
	Remarks	ACGIH
Silver and soluble compounds 7440-22-4	Value type	Time Weighted Average (TWA):
	mg/m³	0.01
	Remarks	VN OEL
DIETHYLENE TRIAMINE 111-40-0	Value type	Time Weighted Average (TWA):
	ppm	1
	Remarks	ACGIH
DIETHYLENE TRIAMINE 111-40-0	Value type	Skin designation:
	Remarks	ACGIH Danger of cutaneous absorption

Respiratory protection:

In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387).
This recommendation should be matched to local conditions.

Hand protection:

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

Eye protection:

Goggles which can be tightly sealed.
Protective eye equipment should conform to EN166.

Body protection:

Protective clothing that covers arms and legs.
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
liquid

Odor:

Odourless / Odorless

Odor threshold (CA):	No data available.
pH:	Not applicable, Product is non-soluble (in water).
Melting point / freezing point:	Not applicable, Product is a liquid
Specific gravity:	1.97
Boiling point:	214 °C (417.2 °F)
Flash point:	> 93 °C (> 199.4 °F)
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Lower explosive limit:	1.00 %(V)
Upper explosive limit:	6.90 %(V)
Vapor pressure: (; 20 °C (68 °F))	< 1 hPa
Vapor density:	> 1
Density:	1.97 g/cm ³
Solubility:	Miscible
Partition coefficient: n-octanol/water:	No data available.
Auto ignition:	Not available.
Decomposition temperature:	No data available.
Viscosity:	150,000 mPa.s (; Method: no method / method unknown)
VOC content: (2010/75/EC)	< 3 %

Section 10. Stability and reactivity

Reactivity/Incompatible materials:	Reaction with strong oxidants.
Chemical stability:	Stable under recommended storage conditions.
Conditions to avoid:	Excessive heat. Keep away from heat, ignition sources and incompatible materials. Protect from direct sunlight.
Hazardous decomposition products:	In case of fire toxic gases can be released.

Section 11. Toxicological information

Oral toxicity:	Acute toxicity estimate (ATE) : > 2,000 mg/kg Method: Calculation method
Inhalative toxicity:	Acute toxicity estimate (ATE) : > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method

Health Effects:

Skin: Causes skin irritation.
May cause an allergic skin reaction.

Eyes: Causes serious eye irritation.

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)
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)
Reaction mass of 2-[[[2-[(2- aminoethyl)amino]ethyl]amino]car bonyl]-benzoic acid and 2,2' - [iminobis(2,1- ethanediyiminocarbonyl)]bis- benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25- dodecahydrodibenzo[i,t] [1,4,7,12,15,18] hexaazacyclodocosine- 5,13,18,26(6H,19H)- tetrone	Value type	LD50
	Value	> 1,000 - < 3,000 mg/kg
	Species	rat
	Method	not specified
Reaction mass of 2-[[[2-[(2- aminoethyl)amino]ethyl]amino]car bonyl]-benzoic acid and 2,2' - [iminobis(2,1- ethanediyiminocarbonyl)]bis- benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25- dodecahydrodibenzo[i,t] [1,4,7,12,15,18] hexaazacyclodocosine- 5,13,18,26(6H,19H)- tetrone	Value type	Acute toxicity estimate (ATE)
	Value	1,001 mg/kg
	Species	
	Method	Expert judgement
2-(2-Ethoxyethoxy)ethyl acetate 112-15-2	Value type	LD50
	Value	11,000 mg/kg
	Species	rat
	Method	not specified
2,2'-iminodiethylamine 111-40-0	Value type	LD50
	Value	1,553 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)

Acute inhalative toxicity:

Reaction mass of 2-[[[2-[(2-aminoethyl)amino]ethyl]amino]carbonyl]-benzoic acid and 2,2'-[iminobis(2,1-ethanediyliminocarbonyl)]bis-benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25-dodecahydridibenzo[i,t][1,4,7,12,15,18]hexaazacyclodocosine-5,13,18,26(6H,19H)- tetrone	Value type	LC50
	Value	> 1.05 mg/l
	Exposure time	4 h
	Species	rat
	Method	not specified
2,2'-iminodiethylamine 111-40-0	Value type	LD 50
	Value	> 0.07 - < 0.30 mg/l
	Exposure time	4 h
	Species	rat
	Method	OECD Guideline 403 (Acute Inhalation Toxicity)
2,2'-iminodiethylamine 111-40-0	Value type	Acute toxicity estimate (ATE)
	Value	0.071 mg/l
	Exposure time	
	Species	
	Method	Expert judgement

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)
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)
Reaction mass of 2-[[[2-[(2-aminoethyl)amino]ethyl]amino]carbonyl]-benzoic acid and 2,2'-[iminobis(2,1-ethanediyliminocarbonyl)]bis-benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25-dodecahydridibenzo[i,t][1,4,7,12,15,18]hexaazacyclodocosine-5,13,18,26(6H,19H)- tetrone	Value type	LD50
	Value	> 3,000 mg/kg
	Species	rabbit
	Method	equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity)
2-(2-Ethoxyethoxy)ethyl acetate 112-15-2	Value type	LD50
	Value	15,281 mg/kg
	Species	rabbit
	Method	not specified
2,2'-iminodiethylamine 111-40-0	Value type	LD50
	Value	1,045 mg/kg
	Species	rabbit
	Method	not specified

Skin corrosion/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
Reaction mass of 2-[[[2-[(2-aminoethyl)amino]ethyl]amino]carbonyl]-benzoic acid and 2,2'-[iminobis(2,1-ethanediyliminocarbonyl)]bis-benzoic	Result	not irritating
	Exposure time	
	Species	human
	Method	Patch Test

acid and 7,8,9,10,11,12,20,21,22,23,24,25- dodecahydridibenzo[i,t] [1,4,7,12,15,18] hexaazacyclodocosine- 5,13,18,26(6H,19H)- tetrone		
2-(2-Ethoxyethoxy)ethyl acetate 112-15-2	Result	not irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
2,2'-iminodiethylamine 111-40-0	Result	corrosive
	Exposure time	15 min
	Species	rabbit
	Method	BASF Test

Serious eye damage/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
Reaction mass of 2-[[[2-[(2- aminoethyl)amino]ethyl]amino]carbonyl] -benzoic acid and 2,2' -[iminobis(2,1- ethanediyliminocarbonyl)]bis-benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25- dodecahydridibenzo[i,t] [1,4,7,12,15,18] hexaazacyclodocosine- 5,13,18,26(6H,19H)- tetrone	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
2-(2-Ethoxyethoxy)ethyl acetate 112-15-2	Result	irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
2,2'-iminodiethylamine 111-40-0	Result	corrosive
	Exposure time	30 s
	Species	rabbit
	Method	not specified

Respiratory or skin sensitization:

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)
Reaction mass of 2-[[[2-[(2- aminoethyl)amino]ethyl]amino]car bonyl]-benzoic acid and 2,2' - [iminobis(2,1- ethanediyliminocarbonyl)]bis- benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25- dodecahydridibenzo[i,t] [1,4,7,12,15,18] hexaazacyclodocosine- 5,13,18,26(6H,19H)- tetrone	Result	not sensitising
	Test type	Patch-Test
	Species	human
	Method	Patch Test
2-(2-Ethoxyethoxy)ethyl acetate 112-15-2	Result	not sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
2,2'-iminodiethylamine 111-40-0	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

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)
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
Reaction mass of 2-[[[2-(2-aminoethyl)amino]ethyl]amino]carbonyl]-benzoic acid and 2,2' -[iminobis(2,1-ethanediyliminocarbonyl)]bis-benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25 -dodecahydrodibenzo[i,t][1,4,7,12,15,18] hexaazacyclodocosine-5,13,18,26(6H,19H)- tetrone	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)
Reaction mass of 2-[[[2-(2-aminoethyl)amino]ethyl]amino]carbonyl]-benzoic acid and 2,2' -[iminobis(2,1-ethanediyliminocarbonyl)]bis-benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25 -dodecahydrodibenzo[i,t][1,4,7,12,15,18] hexaazacyclodocosine-5,13,18,26(6H,19H)- tetrone	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)
Reaction mass of 2-[[[2-(2-aminoethyl)amino]ethyl]amino]carbonyl]-benzoic acid and 2,2' -[iminobis(2,1-ethanediyliminocarbonyl)]bis-benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25 -dodecahydrodibenzo[i,t][1,4,7,12,15,18] hexaazacyclodocosine-5,13,18,26(6H,19H)- tetrone	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)
2,2'-iminodiethylamine 111-40-0	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)
2,2'-iminodiethylamine 111-40-0	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	with and without
	Method	Chromosome Aberration Test
2,2'-iminodiethylamine 111-40-0	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	mouse
	Method	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
2,2'-iminodiethylamine 111-40-0	Result	negative
	Type of study / Route of administration	oral: gavage

	Metabolic activation / Exposure time	
	Species	mouse
	Method	not specified

Repeated dose toxicity:

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)
Reaction mass of 2-[[[2-[(2-aminoethyl)amino]ethyl]amino]carbonyl]-benzoic acid and 2,2'-[iminobis(2,1-ethanediyiminocarbonyl)]bis-benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25-dodecahydrodibenzo[i,t][1,4,7,12,15,18]hexaazacyclodocosine-5,13,18,26(6H,19H)- tetrone	Result	NOAEL=1,000 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	M: 42 ddaily
	Species	rat
	Method	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
2,2'-iminodiethylamine 111-40-0	Result	NOAEL=70 - 80 mg/kg
	Route of application	oral: feed
	Exposure time / Frequency of treatment	90 ddaily
	Species	rat
	Method	not specified
2,2'-iminodiethylamine 111-40-0	Result	NOAEL=0.55 mg/l
	Route of application	inhalation: vapour
	Exposure time / Frequency of treatment	15 d6 h/d
	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 $\geq 99,9$ % Ag as powder ($>100\text{nm}<1\text{mm}$) 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 life stage toxicity test)
Silver $\geq 99,9$ % Ag as powder ($>100\text{nm}<1\text{mm}$) 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:
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:
Reaction mass of 2-[[[2-(2- aminoethyl)amino]ethyl]amino]car bonyl]-benzoic acid and 2,2' - [iminobis(2,1- ethanediyliminocarbonyl)]bis- benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25- dodecahydrodibenzo[i,t] [1,4,7,12,15,18] hexaazacyclodocosine- 5,13,18,26(6H,19H)- tetrone	Value type	LC50
	Value	2.7 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Reaction mass of 2-[[[2-(2- aminoethyl)amino]ethyl]amino]car bonyl]-benzoic acid and 2,2' - [iminobis(2,1- ethanediyliminocarbonyl)]bis- benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25- dodecahydrodibenzo[i,t] [1,4,7,12,15,18] hexaazacyclodocosine- 5,13,18,26(6H,19H)- tetrone	Value type	EC50
	Value	> 100 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Reaction mass of 2-[[[2-(2- aminoethyl)amino]ethyl]amino]car bonyl]-benzoic acid and 2,2' - [iminobis(2,1- ethanediyliminocarbonyl)]bis- benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25- dodecahydrodibenzo[i,t] [1,4,7,12,15,18] hexaazacyclodocosine- 5,13,18,26(6H,19H)- tetrone	Value type	EC50
	Value	2.6 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	1 mg/l
	Acute Toxicity Study	Algae

	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Reaction mass of 2-[[[2-[(2-aminoethyl)amino]ethyl]amino]carbonyl]-benzoic acid and 2,2'-[iminobis(2,1-ethanediyliminocarbonyl)]bis-benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25-dodecahydrodibenzo[i,t][1,4,7,12,15,18]hexaazacyclodocosine-5,13,18,26(6H,19H)- tetrone	Value type	EC50
	Value	1,000 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)
2-(2-Ethoxyethoxy)ethyl acetate 112-15-2	Value type	LC50
	Value	110 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Pimephales promelas
	Method	other guideline:
	Value type	NOEC
	Value	10 mg/l
	Acute Toxicity Study	Fish
	Exposure time	33 d
	Species	Danio rerio
	Method	OECD Guideline 210 (fish early life stage toxicity test)
2-(2-Ethoxyethoxy)ethyl acetate 112-15-2	Value type	EC50
	Value	> 100 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-(2-Ethoxyethoxy)ethyl acetate 112-15-2	Value type	EC50
	Value	> 100 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	NOEC
	Value	>= 100 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)
2,2'-iminodiethylamine 111-40-0	Value type	LC50
	Value	430 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Poecilia reticulata
	Method	EU Method C.1 (Acute Toxicity for Fish)
	Value type	NOEC
	Value	> 10 mg/l
	Acute Toxicity Study	Fish
	Exposure time	28 d
	Species	Gasterosteus aculeatus
	Method	OECD Guideline 210 (fish early life stage toxicity test)
2,2'-iminodiethylamine 111-40-0	Value type	EC50
	Value	64.6 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	EU Method C.2 (Acute Toxicity for Daphnia)
2,2'-iminodiethylamine 111-40-0	Value type	EC50
	Value	1,164 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	NOEC
	Value	10 mg/l

2,2'-iminodiethylamine 111-40-0	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	NOEC
	Value	6 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	anaerobic bacteria
	Method	not specified

Persistence and degradability:

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)
Reaction mass of 2-[[[2-[(2-aminoethyl)amino]ethyl]amino]carbonyl]-benzoic acid and 2,2'-[iminobis(2,1-ethanediyiminocarbonyl)]bis-benzoic acid and 7,8,9,10,11,12,20,21,22,23,24,25-dodecahydrodibenzo[i,t][1,4,7,12,15,18]hexaazacyclodocosine-5,13,18,26(6H,19H)- tetrone	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	25 %
	Method	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
	Result	inherently biodegradable
	Route of application	aerobic
	Degradability	91 %
	Method	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
2-(2-Ethoxyethoxy)ethyl acetate 112-15-2	Result	readily biodegradable
	Route of application	aerobic
	Degradability	100 %
	Method	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
2,2'-iminodiethylamine 111-40-0	Result	inherently biodegradable
	Route of application	aerobic
	Degradability	83 %
	Method	EU Method C.9 (Biodegradation: Zahn-Wellens Test)
	Result	readily biodegradable
	Route of application	aerobic
	Degradability	87 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle 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:
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)
2,2'-iminodiethylamine 111-40-0	Bioconcentration factor (BCF)	> 0.3 - < 6.3
	Exposure time	42 d
	Species	Cyprinus carpio
	Temperature	
	Method	OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)
2,2'-iminodiethylamine 111-40-0	LogPow	-1.58
	Temperature	20 °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:	M6
Hazard ident. number:	90
UN no.:	3082
Label:	9
Technical name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver)

Railroad transport RID:

Class:	9
Packing group:	III
Classification code:	M6
Hazard ident. number:	90
UN no.:	3082
Label:	9
Technical name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver)

Inland water transport ADN:

Class:	9
Packing group:	III
Classification code:	M6
Hazard ident. number:	90
UN no.:	3082
Label:	9
Technical name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver)

Marine transport IMDG:

Class:	9
Packing group:	III
UN no.:	3082
Label:	9
EmS:	F-A ,S-F
Seawater pollutant:	Marine pollutant
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (Silver)

Air transport IATA:

Class:	9
Packing group:	III
Packaging instructions (passenger):	964
Packaging instructions (cargo):	964
UN no.:	3082
Label:	9
Proper shipping name:	Environmentally hazardous substance, liquid, 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: This Safety Data Sheet has been generated based on

LAW ON CHEMICALS No. 69/2025/QH15, issued on June 14, 2025;

Decree No. 24/2026/NĐ-CP, issued on January 17, 2026, ON THE LISTS OF CHEMICALS GOVERNED BY THE LAW ON CHEMICALS;

Decree No. 25/2026/NĐ-CP, issued on January 17, 2026, DETAILED REGULATIONS AND MEASURES FOR ORGANIZING AND GUIDING THE IMPLEMENTATION OF CERTAIN ARTICLES OF THE LAW ON CHEMICALS CONCERNING THE DEVELOPMENT OF THE CHEMICAL INDUSTRY AND CHEMICAL SAFETY AND SECURITY;

Decree No. 26/2026/NĐ-CP, issued on January 17, 2026, DETAILED REGULATIONS AND GUIDELINES FOR IMPLEMENTING CERTAIN ARTICLES OF THE LAW ON CHEMICALS REGARDING THE MANAGEMENT OF CHEMICAL ACTIVITIES AND HAZARDOUS CHEMICALS IN PRODUCTS AND GOODS;

Circular No. 01/2026/TT-BCT, issued on January 17, 2026, DETAILED REGULATIONS AND GUIDELINES FOR IMPLEMENTING CERTAIN ARTICLES OF THE LAW ON CHEMICALS AND GOVERNMENT DECREE NO. 26/2026/ND-CP DETAILING AND GUIDING THE IMPLEMENTATION OF CERTAIN ARTICLES OF THE LAW ON CHEMICALS REGARDING THE MANAGEMENT OF CHEMICAL ACTIVITIES AND HAZARDOUS CHEMICALS IN PRODUCTS AND GOODS;

Circular No. 02/2026/TT-BCT, issued on January 17, 2026, REGULATIONS ON SOME IMPLEMENTATION MEASURES OF THE LAW ON CHEMICALS AND GOVERNMENT DECREE NO. 25/2026/ND-CP DETAILING AND PROVIDING MEASURES FOR ORGANIZING AND GUIDING THE IMPLEMENTATION OF SOME ARTICLES OF THE LAW ON CHEMICALS CONCERNING THE DEVELOPMENT OF THE CHEMICAL INDUSTRY AND CHEMICAL SAFETY AND SECURITY;

Decree No. 161/2024/ND-CP, issued on December 18, 2024, ON LIST OF DANGEROUS GOODS, TRANSPORT OF DANGEROUS GOODS AND PROCEDURES FOR ISSUANCE OF LICENSES OR CERTIFICATES OF COMPLETION OF TRAINING PROGRAMS FOR DRIVERS OR ESCORTS TRANSPORTING DANGEROUS GOODS BY ROAD;

Decree No. 34/2024/NĐ-CP, issued on March 31, 2024, ON LIST OF DANGEROUS GOODS, TRANSPORT OF DANGEROUS GOODS BY INLAND WATERCRAFT;

Decree No. 33/2024/NĐ-CP, issued on March 27, 2024, IMPLEMENTING THE CONVENTION ON THE PROHIBITION OF THE DEVELOPMENT, PRODUCTION, STOCKPILING AND USE OF CHEMICAL WEAPONS AND ON THEIR;

Decree No. 37/2026/NĐ-CP, issued on January 23, 2026, ELABORATING CERTAIN ARTICLES AND MEASURES FOR ORGANIZING AND GUIDING THE IMPLEMENTATION OF THE

LAW ON PRODUCT AND GOODS QUALITY.

If other regulatory information applies that is not already provided or updated elsewhere in this Safety Data Sheet, then it is described in this subsection.

Global inventory status:

Regulatory list	Notification
TCSI	yes
TSCA	yes
AIIC	yes
DSL	yes
ENCS (JP)	yes
ISHL (JP)	yes
KECI (KR)	yes
PICCS (PH)	yes
IECSC	yes
NZIOC	yes

Section 16. Other information

Disclaimer:

This Safety Data Sheet has been generated based on Law On Chemicals No. 69/2025/QH15; Decree No. 24/2026/NĐ-CP; Decree No. 25/2026/NĐ-CP; Decree No. 26/2026/NĐ-CP; Circular No. 01/2026/TT-BCT; Circular No. 02/2026/TT-BCT; Decree No. 161/2024/ND-CP; Decree No. 34/2024/NĐ-CP; Decree No. 33/2024/NĐ-CP, and Decree No. 37/2026/NĐ-CP.

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.

Dear Customer,

Henkel is committed to creating a sustainable future by promoting opportunities along the entire value chain. If you would like to contribute by switching from a paper to the electronic version of SDS, please contact the local Customer Service representative. We recommend to use a non-personal email address (e.g. SDS@your_company.com).