



Safety Data Sheet according to Singapore Standard SS 586.

Page 1 of 9

LOCTITE ECI 1010 0.2KG E&C

SDS No. : 537534

V001.4

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

Product name: LOCTITE ECI 1010 0.2KG E&C

Other means of identification: LOCTITE ECI 1010 0.2KG E&C

Product code: IDH2022182

Recommended use of the chemical and restrictions on use

Intended use: Conductive PTF ink

Manufacturer/Importer/Distributor Representative Company

Henkel Singapore Pte Ltd

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Emergency Telephone for Chemical Accidents: FOR EMERGENCIES ONLY (Spill, major leak, Fire, Exposure, or Accident). Call: +65 6424 7016

Section 2. Hazards identification

GHS Classification:

Hazard Class

Toxic to reproduction
Specific target organ toxicity - repeated exposure
Acute hazards to the aquatic environment
Chronic hazards to the aquatic environment

Hazard Category

Category 2
Category 2
Category 1
Category 1

Target organ

Nervous system

GHS label elements:

Hazard pictogram:



Signal word:

Warning

Hazard statement: 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: P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response: P308+P313 IF exposed or concerned: Get medical advice/attention.
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 Target Organ Systemic Toxicant - Repeated exposure 2 H373 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410
2-Butoxyethyl acetate 112-07-2	10- 30 %	Acute toxicity 4; Oral H302 Acute toxicity 4; Dermal H312

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.

Indication of immediate medical attention and special treatment needed: See section: Description of first aid measures

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 (CO ₂) and nitrogen oxides (NO _x) can be released.
Special protection equipment and precautions for firefighters:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.
Additional fire fighting advice:	In case of fire, keep containers cool with water spray.

Section 6. Accidental release measures

Personal precautions:	Avoid contact with skin and eyes. Wear protective equipment. Ensure adequate ventilation. Remove sources of ignition.
Environmental precautions:	Do not empty into drains / surface water / ground water.
Clean-up methods:	For small spills wipe up with paper towel and place in container for disposal. For large spills absorb onto inert absorbent material and place in sealed container for disposal.

Section 7. Handling and storage

Handling:	Avoid skin and eye contact. See advice in section 8
Storage:	Ensure good ventilation/extraction. Keep away from sources of ignition. Keep container tightly sealed.

Section 8. Exposure controls / personal protection

Components with specific control parameters for workplace:

Silver, Metal 7440-22-4	Value type	Time Weighted Average (TWA):
	mg/m³	0.1
	Remarks	SG OEL
Silver, metal, dust and fume 7440-22-4	Value type	Time Weighted Average (TWA):
	mg/m³	0.1
	Remarks	ACGIH
2-BUTOXYETHYL ACETATE (EGBEA) 112-07-2	Value type	Time Weighted Average (TWA):
	ppm	20
	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
Filter type: A (EN 14387)

Hand protection:

Chemical-resistant protective gloves (EN 374).
Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:

Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.
Protective eye equipment should conform to EN166.

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:

Acetate

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:	2.2
Boiling point:	186 °C (366.8 °F)
Flash point:	71 °C (159.8 °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: (; 20 °C (68 °F))	< 1 hPa
Vapor density:	> 1
Density:	2.2 g/cm ³
Solubility:	No data available.
Partition coefficient: n-octanol/water:	No data available.
Auto ignition:	No data available.
Decomposition temperature:	No data available.
Viscosity:	10,000 mPa.s (; Method: no method / method unknown)
VOC content:	No data available.

Section 10. Stability and reactivity

Reactivity/Incompatible materials:	Reaction with strong oxidants.
Chemical stability:	Stable under recommended storage conditions.
Conditions to avoid:	Heat, flames, sparks and other sources of ignition.
Hazardous decomposition products:	Hydrocarbons carbon oxides. nitrogen oxides

Section 11. Toxicological information

Oral toxicity:	Acute toxicity estimate (ATE) : > 2,000 mg/kg Method: Calculation method
Dermal toxicity:	Acute toxicity estimate (ATE) : > 2,000 mg/kg Method: Calculation method
Symptoms of Overexposure:	Prolonged or repeated skin contact with silver and its salts may cause a blue-gray discoloration of the skin and mucous membranes that is irreversible (Argyria). Prolonged or repeated contact may cause skin irritation. Prolonged or repeated contact may cause eye irritation.

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)
2-Butoxyethyl acetate 112-07-2	Value type	LD50
	Value	1,880 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)

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)
2-Butoxyethyl acetate 112-07-2	Value type	LD50
	Value	1,500 mg/kg
	Species	rabbit
	Method	not specified

Skin corrosion/irritation:

2-Butoxyethyl acetate 112-07-2	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	BASF Test

Serious eye damage/irritation:

2-Butoxyethyl acetate 112-07-2	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	BASF 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)

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 life 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

Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Method	other guideline:
	Value type	EC10
	Value	0.00016 mg/l
	Acute Toxicity Study	Algae
	Exposure time	15 d
	Species	other:
2-Butoxyethyl acetate 112-07-2	Method	other guideline:
	Value type	LC50
	Value	80 mg/l
	Acute Toxicity Study	Fish
	Exposure time	48 h
	Species	Leuciscus idus
2-Butoxyethyl acetate 112-07-2	Method	DIN 38412-15
	Value type	EC50
	Value	37 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
2-Butoxyethyl acetate 112-07-2	Method	DIN 38412, part 11
	Value type	EC10
	Value	> 500 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)
2-Butoxyethyl acetate 112-07-2	Method	DIN 38412-09
	Value type	EC50
	Value	> 500 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)
2-Butoxyethyl acetate 112-07-2	Method	DIN 38412-09
	Value type	EC10
	Value	720 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	17 h
	Species	
2-Butoxyethyl acetate 112-07-2	Method	not specified
	Value type	
	Value	
	Acute Toxicity Study	
	Exposure time	
	Species	

Persistence and degradability:

2-Butoxyethyl acetate 112-07-2	Result	readily biodegradable
	Route of application	aerobic
	Degradability	76 %
	Method	EU Method C.4-E (Determination of the "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:
2-Butoxyethyl acetate 112-07-2	LogPow	1.51
	Temperature	
	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
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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: Workplace Safety And Health Act (Chapter 354A, Section 40B) Workplace Safety And Health (Approved Codes of Practice) Notification 2020.
Workplace Safety And Health Act (Chapter 354A, Section 65) Workplace Safety And Health (General Provisions) (Amendment No.2) Regulations 2024

Global inventory status:

Regulatory list	Notification
TSCA	yes
DSL	yes
ENCS (JP)	yes
KECI (KR)	yes
PICCS (PH)	yes
IECSC	yes

Section 16. Other information

Disclaimer:

This Safety Data Sheet has been generated based on Workplace Safety And Health Act (Chapter 354A, Section 40B) Workplace Safety And Health (Approved Codes of Practice) Notification 2020 and Workplace Safety And Health Act (Chapter 354A, Section 65) Workplace Safety And Health (General Provisions) (Amendment No.2) Regulations 2024 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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