



Safety Data Sheet according to Singapore Standard SS 586.

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LOCTITE EDAG PF 006 1KGX E&C

SDS No. : 325857

V001.6

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

Product name: LOCTITE EDAG PF 006 1KGX E&C

Other means of identification: LOCTITE EDAG PF 006 1KGX E&C

Product code: IDH2051392

Recommended use of the chemical and restrictions on use

Intended use: 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:

<u>Hazard Class</u>	<u>Hazard Category</u>
Serious eye damage/eye irritation	Category 2A
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: H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precaution:

Prevention: P264 Wash hands thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response: P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: 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-(2-Ethoxyethoxy)ethyl acetate 112-15-2	30- 60 %	Serious eye irritation 2 H319
Graphite 7782-42-5	1- 10 %	

Section 4. First aid measures

Inhalation: Move to fresh air.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
Get medical attention.

Skin contact: Immediately flush skin with plenty of water (using soap, if available).
Remove contaminated clothing and footwear.
Wash clothing before reuse.
If symptoms develop and persist, get medical attention.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Get medical attention.

Ingestion: DO NOT induce vomiting unless directed to do so by medical personnel.
Never give anything by mouth to an unconscious person.
Get medical attention.

Section 5. Fire fighting measures

Suitable extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide. Do not use direct water stream on burning liquid.
Specific hazards arising from the chemical:	This product is combustible at high temperatures. Closed containers may rupture (due to build up of pressure) when exposed to extreme heat.
Special protection equipment and precautions for firefighters:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. In case of fire, keep containers cool with water spray.
Hazardous combustion products:	Oxides of carbon. Irritating organic vapours.

Section 6. Accidental release measures

Personal precautions:	Avoid skin and eye contact. Ensure adequate ventilation. Wear protective equipment.
Environmental precautions:	Do not allow product to enter sewer or waterways.
Clean-up methods:	Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Store in a partly filled, closed container until disposal.

Section 7. Handling and storage

Handling:	Keep away from sources of ignition - no smoking. Avoid skin and eye contact. Use only in well-ventilated areas. Ground and bond all equipment as required (when transferring products).
Storage:	Store in tightly closed containers. In a cool/well-ventilated area. Keep away from sources of ignition. Store in a dry place. Store below 90°F. (32.2°C)

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
GRAPHITE (ALL FORMS EXCEPT GRAPHITE FIBERS), RESPIRABLE FRACTION 7782-42-5	Value type	Time Weighted Average (TWA):
	mg/m³	2
	Remarks	ACGIH
Graphite, respirable dust 7782-42-5	Value type	Time Weighted Average (TWA):
	mg/m³	2
	Remarks	SG OEL

Respiratory protection:	Use a NIOSH approved respirator if ventilation is inadequate. Do not inhale vapors and fumes.
Hand protection:	The use of chemical resistant gloves such as Neoprene or Natural Rubber is recommended
Eye protection:	Wear safety glasses; chemical goggles (if splashing is possible).
Body protection:	Protective clothing that covers arms and legs.
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 viscous, Liquid
Odor:	No data available.
Odor threshold (CA):	No data available.
pH:	Not available.
Melting point / freezing point:	No data available.
Specific gravity:	1.738
Boiling point:	214.0 °C (417.2 °F)
Flash point:	107 °C (224.6 °F)
Evaporation rate:	1 (Butyl acetate = 1)
Flammability (solid, gas):	No data available.
Lower explosive limit:	No data available.
Upper explosive limit:	No data available.
Vapor pressure:	0.1000000 mbar
Vapor density:	1.0

Density:	(Air = 1) No data available.
Solubility:	Insoluble
Partition coefficient: n-octanol/water:	No data available.
Auto ignition:	Not available.
Decomposition temperature:	No data available.
Viscosity:	16,000 mPa.s (; Method: ;; viscosity, Brookfield)
VOC content:	742.00 g/l

Section 10. Stability and reactivity

Reactivity/Incompatible materials:	Oxidizers.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Will not occur.
Conditions to avoid:	Elevated temperatures. Oxidizing conditions.
Hazardous decomposition products:	Oxides of carbon. Irritating organic vapours.

Section 11. Toxicological information

Health Effects:	
Ingestion:	May cause gastrointestinal tract irritation if swallowed.
Skin:	Causes skin irritation. Argyria (a non-toxic, cosmetic blue-gray discoloration of the skin and mucous membranes that is irreversible).
Eyes:	Causes serious eye irritation. Redness. Tearing.
Inhalation:	May cause respiratory tract irritation. May cause central nervous system effects with nausea, dizziness and headache.
Route of exposure:	Skin, Inhalation, Eyes Ingestion
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)
2-(2-Ethoxyethoxy)ethyl acetate 112-15-2	Value type	LD50
	Value	11,000 mg/kg
	Species	rat
	Method	not specified
Graphite 7782-42-5	Value type	Acute toxicity estimate (ATE)
	Value	> 5,000 mg/kg
	Species	
	Method	Expert judgement

Acute inhalative toxicity:

Graphite 7782-42-5	Value type	LC50
	Value	> 2 mg/l
	Exposure time	4 h
	Species	rat
	Method	OECD Guideline 403 (Acute Inhalation 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-(2-Ethoxyethoxy)ethyl acetate 112-15-2	Value type	LD50
	Value	15,281 mg/kg
	Species	rabbit
	Method	not specified

Skin corrosion/irritation:

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)
Graphite 7782-42-5	Result	not irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

2-(2-Ethoxyethoxy)ethyl acetate 112-15-2	Result	irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Graphite 7782-42-5	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Graphite 7782-42-5	Result	not sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	equivalent or similar to 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)
Graphite 7782-42-5	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)
Graphite 7782-42-5	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)
Graphite 7782-42-5	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)

Repeated dose toxicity:

Graphite 7782-42-5	Result	NOAEL=ca. 813 mg/kg
	Route of application	oral: feed
	Exposure time / Frequency of treatment	daily
	Species	rat
	Method	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening 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 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:
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:
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	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Graphite 7782-42-5	Value type	LC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Danio rerio
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Graphite 7782-42-5	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)
Graphite 7782-42-5	Value type	EC50
	Value	Toxicity > Water solubility
	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	Toxicity > Water solubility
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Raphidocelis subcapitata (new name: Pseudokirchneriella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Graphite 7782-42-5	Value type	EC50
	Value	Toxicity > Water solubility
	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)

Persistence and degradability:

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))

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:

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: 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
ENCS (JP)	yes
PICCS (PH)	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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