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

Product name:
LOCTITE ABLESTIK 2200D

Other means of identification:
LOCTITE ABLESTIK 2200D

Product code:
IDH2703273

Recommended use of the chemical and restrictions on use

Intended use:
Conductive 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 sensitizer	Category 1
Germ cell mutagenicity	Category 2
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:
H317 May cause an allergic skin reaction.
H341 Suspected of causing genetic defects.
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.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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

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

Section 3. Composition / information on ingredients

Substance or Mixture:
Mixture

Declaration of hazardous chemical:

Hazard component CAS-No.	Content	GHS Classification
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	60- 100 %	Toxic to reproduction 2 H361 Specific target organ toxicity - repeated exposure 2 H373 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410
Epoxy resin Proprietary	1- 10 %	Skin sensitizer 1 H317 Germ cell mutagenicity 2 H341
Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	1- 10 %	Skin sensitizer 1B H317
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	0.1- 1 %	Acute toxicity 3; Inhalation H331 Skin sensitizer 1A H317 Chronic hazards to the aquatic environment 1 H410

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.
If symptoms develop and persist, get medical attention.
Wash clothing before reuse.

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.
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.

Specific hazards arising from the chemical:
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.
Oxides of nitrogen.
Oxides of Metals in Section 3.
Toxic and irritating vapors.

Section 6. Accidental release measures

Personal precautions:
Wear protective equipment.

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

Clean-up methods:
Dispose of contaminated material as waste according to Section 13.
Keep in suitable and closed containers for disposal.

Section 7. Handling and storage

Handling:
Use only with adequate ventilation.
Avoid contact with eyes, skin and clothing.
Do not taste or swallow.
Do not breathe gas/fumes/vapor/spray.
Keep container closed.
Wash thoroughly after handling.

Storage:
Store in a cool, dry place.
Ensure adequate ventilation.
Keep container tightly sealed.

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:
Suitable breathing mask when there is inadequate ventilation.

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.

Body protection:
Wear protective equipment.
Suitable protective clothing

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:	Slight

Odor threshold (CA):	No data available.
pH:	Not available.
Melting point / freezing point:	Not available.
Specific gravity:	3.3
Boiling point:	No data available.
Flash point:	> 93 °C (> 199.4 °F)
Evaporation rate:	Not available.
Flammability (solid, gas):	non flammable
Lower explosive limit:	No data available.
Upper explosive limit:	No data available.
Vapor pressure:	Not applicable
Vapor density:	Not available.
Density:	No data available.
Solubility:	No data available.
Partition coefficient: n-octanol/water:	No data available.
Auto ignition:	Not available.
Decomposition temperature:	No data available.
Viscosity:	No data available.
VOC content:	No data available.

Section 10. Stability and reactivity

Reactivity/Incompatible materials:
Strong oxidizing agents.
Acids
Bases
Chemical stability:
Stable under recommended storage conditions.
Possibility of hazardous reactions:
Will not occur
Conditions to avoid:
Avoid excessive heat and ignition sources.
Hazardous decomposition products:
Oxides of carbon.
Oxides of nitrogen.

Section 11. Toxicological information

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

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

Acute oral toxicity:

Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 423 (Acute Oral toxicity)
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 423 (Acute Oral toxicity)

Acute inhalative toxicity:

1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	Value type	LC50
	Value	0.515 - 1 mg/l
	Exposure time	4 h
	Species	rat
	Method	OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method)
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	Value type	Acute toxicity estimate (ATE)
	Value	0.515 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)
Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	Value type	LD50
	Value	> 5,400 mg/kg
	Species	rat
	Method	not specified

Skin corrosion/irritation:

Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	Result	not irritating
	Exposure time	60 min
	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:

Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	Result	not irritating
	Exposure time	60 min
	Species	Human, corneal model
	Method	not specified
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	Result	sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	Result	sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Result	negative
	Type of study / Route of administration	in vitro mammalian cell micronucleus test
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
Epoxy resin Proprietary	Result	positive with metabolic activation
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	
	Method	not specified
Epoxy resin Proprietary	Result	positive
	Type of study / Route of administration	intraperitoneal
	Metabolic activation / Exposure time	
	Species	
	Method	not specified
Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	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)
Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	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)
Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	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)
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	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)
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	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)
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	rat
	Method	OECD Guideline 489 (In Vivo Mammalian Alkaline Comet Assay)

Repeated dose toxicity:

Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	Result	NOAEL=62.5 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)

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:
Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	Value type	LC50
	Value	> 10,000 mg/l
	Acute Toxicity Study	Fish
	Exposure time	48 h
	Species	Leuciscus idus
	Method	DIN 38412-15
Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	Value type	EC50
	Value	> 100 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	24 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	Value type	EC 50
	Value	> 100 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	Value type	LC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
	Value type	NOEC
	Value	0.043 mg/l
	Acute Toxicity Study	Fish
	Exposure time	33 d
	Species	Pimephales promelas
	Method	OECD Guideline 210 (fish early lite stage toxicity test)

1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	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)
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	Value type	NOEC
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	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:

Epoxy resin Proprietary	Result	
	Route of application	
	Degradability	7 %
	Method	not specified
Cashew, nutshell liq. polymer with epichlorohydrin 68413-24-1	Result	readily biodegradable
	Route of application	aerobic
	Degradability	79 %
	Method	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	0 %
	Method	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry 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:
1,1'-(methylenedi-p-phenylene)bismaleimide 13676-54-5	LogPow	1.5
	Temperature	25 °C
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)

Section 13. Disposal considerations

Product

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

Packaging

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

Section 14. Transport information

Road transport ADR:

Class:	9
Packing group:	III
Classification code:	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:

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

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.

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).