



Safety Data Sheet

Page 1 of 10

LOCTITE 460

SDS No. : 434271

V001.9

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

Product name: LOCTITE 460

Other means of identification: LOCTITE 460 BO20G EGFD

Product code: IDH230213

Recommended use of the chemical and restrictions on use

Intended use: Adhesive

Identification of manufacturer, importer or distributor

Importer: Henkel Singapore Pte Ltd 401 Commonwealth Drive, #03-01/02, Haw Par Technocentre, Singapore. 149598
Phone : +65 62660100 Fax : +65 62661161

E-mail address of person responsible for Safety Data Sheet: ap-ua-psra.sea@henkel.com

Emergency information: FOR EMERGENCIES ONLY (Spill, major leak, Fire, Exposure, or Accident). Call CHEMTREC: +1 703-741-5970

Section 2. Hazards identification

GHS Classification:

Hazard Class

Chronic hazards to the aquatic environment

Hazard Category

Category 3

GHS label elements:

Hazard statement: H412 Harmful to aquatic life with long lasting effects.

Precaution:

Prevention: P273 Avoid release to the environment.

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 |
|---|----------|--|
| Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane 105391-33-1 | 1- 10 % | Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410 |
| Bis(2-hydroxy-3-tert-butyl-5-methylphenyl)methane 119-47-1 | 0.1- 1 % | Toxic to reproduction 2 H361f |
| Hydroquinone 123-31-9 | < 0.1 % | Acute toxicity 4; Oral H302 Serious eye damage/eye irritation 1 H318 Skin Sensitization 1 H317 Germ cell mutagenicity 2 H341 Carcinogenicity 2 H351 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410 |

Section 4. First aid measures

| | |
|--|--|
| Inhalation: | Move to fresh air, consult doctor if complaint persists. |
| Skin contact: | Do not pull bonded skin apart. It may be gently peeled apart using a blunt object such as a spoon, preferably after soaking in warm soapy water. Cyanoacrylates give off heat on solidification. In rare cases a large drop will generate enough heat to cause a burn. Burns should be treated normally after the adhesive has been removed from the skin. If lips are accidentally stuck together apply warm water to the lips and encourage maximum wetting and pressure from saliva inside the mouth. Peel or roll lips apart. Do not try to pull the lips apart with direct opposing action. |
| Eye contact: | If the eye is bonded closed, release eyelashes with warm water by covering with wet pad. Cyanoacrylate will bond to eye protein and will cause periods of weeping which will help to debond the adhesive. Keep eye covered until debonding is complete, usually within 1-3 days. Do not force eye open. Medical advice should be sought in case solid particles of cyanoacrylate trapped behind the eyelid cause any abrasive damage. |
| Ingestion: | Ensure that breathing passages are not obstructed. The product will polymerise immediately in the mouth making it almost impossible to swallow. Saliva will slowly separate the solidified product from the mouth (several hours). |
| Indication of immediate medical attention and special treatment needed: | See section: Description of first aid measures |

Section 5. Fire fighting measures

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|--------------------------------------|---|
| Suitable extinguishing media: | Foam, extinguishing powder, carbon dioxide. Fine water spray |
|--------------------------------------|---|

| | |
|---|--|
| Specific hazards arising from the chemical: | In the event of a fire, carbon monoxide (CO) and carbon dioxide (CO ₂) can be released. In case of fire, keep containers cool with water spray. |
| Special protection equipment and precautions for firefighters: | Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA). |
| Hazardous combustion products: | Oxides of carbon, oxides of nitrogen, irritating organic vapors. |

Section 6. Accidental release measures

| | |
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| Personal precautions: | Ensure adequate ventilation. Avoid contact with skin and eyes. Wear protective equipment. See advice in section 8 |
| Environmental precautions: | Do not let product enter drains. |
| Clean-up methods: | Do not use cloths for mopping up. Flood with water to complete polymerization and scrape off the floor. Cured material can be disposed of as non-hazardous waste. Dispose of contaminated material as waste according to Section 13. |

Section 7. Handling and storage

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| Handling: | Ventilation (low level) is recommended when using large volumes Use of dispensing equipment is recommended to minimise the risk of skin or eye contact Avoid skin and eye contact. See advice in section 8 |
| Storage: | For optimum shelf life store in original containers under refrigerated conditions at 2 - 8°C (35.6 - 46.4 °F) Refer to Technical Data Sheet |

Section 8. Exposure controls / personal protection

Components with specific control parameters for workplace:

| | | |
|---|-------------------------|------------------------------|
| HYDROQUINONE 123-31-9 | Value type | Time Weighted Average (TWA): |
| | mg/m³ | 1 |
| | Remarks | ACGIH |
| HYDROQUINONE (DIHYDROXY BENZENE) 123-31-9 | Value type | Time Weighted Average (TWA): |
| | mg/m³ | 2 |
| | Remarks | SG PEL |

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:

Polyethylene or polypropylene gloves are recommended when using large volumes.
Do not use PVC, rubber or nylon gloves.
Please note that in practice the working life of chemical resistant gloves may be considerably reduced as a result of many influencing factors (e.g. temperature). Suitable risk assessment should be carried out by the end user. If signs of wear and tear are noticed then the gloves should be replaced.
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:

Ensure good ventilation/extraction.

General protection and hygiene measures:

The workplace should be equipped with an emergency shower and eye-rinsing facility.

Hygienic measures:

Good industrial hygiene practices should be observed. Do not eat, drink or smoke while working. Wash hands before work breaks and after finishing work.

Section 9. Physical and chemical properties**Appearance:**

Clear, Colorless, Straw
Liquid

Odor:

No data available.

Odor threshold (CA):

No data available.

pH:

Not applicable

| | |
|---|-----------------------------------|
| Melting point / freezing point: | No data available. |
| Specific gravity: | No data available. |
| Boiling point: | No data available. |
| Flash point: | 80 °C (176 °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: (no method; 50 °C (122 °F)) | < 700 mbar |
| Vapor density: | No data available. |
| Density: | 1.1 g/cm ³ |
| Solubility: | Polymerises in presence of water. |
| Partition coefficient: n-octanol/water: | No data available. |
| Auto ignition: | No data available. |
| Decomposition temperature: | No data available. |
| Viscosity: | No data available. |
| VOC content: (2010/75/EC) | < 3.00 % |

Section 10. Stability and reactivity

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|---|--|
| Reactivity/Incompatible materials: | Rapid exothermic polymerization will occur in the presence of water, amines, alkalis and alcohols. |
| 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

| | |
|---|---|
| General toxicological information: | Prolonged or repeated contact may cause skin irritation. Prolonged or repeated contact may cause eye irritation. Cyanoacrylates are considered to have relatively low toxicity. Acute oral LD50 is >5000mg/kg (rat). It is almost impossible to swallow as it rapidly polymerises in the mouth. Prolonged exposure to high concentrations of vapours may lead to chronic effects in sensitive individuals In dry atmosphere with < 50% humidity, vapours may irritate the eyes and respiratory system |
| Symptoms of Overexposure: | Prolonged or repeated contact may cause skin irritation. Prolonged or repeated contact may cause eye irritation. |

Acute oral toxicity:

| | | |
|---|------------|--|
| Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane 105391-33-1 | Value type | LD50 |
| | Value | > 5,000 mg/kg |
| | Species | rat |
| | Method | OECD Guideline 401 (Acute Oral Toxicity) |
| Bis(2-hydroxy-3-tert-butyl-5-methylphenyl)methane 119-47-1 | Value type | LD50 |
| | Value | > 10,000 mg/kg |
| | Species | rat |
| | Method | not specified |
| Hydroquinone 123-31-9 | Value type | LD50 |
| | Value | 367 mg/kg |
| | Species | rat |
| | Method | OECD Guideline 401 (Acute Oral Toxicity) |

Acute dermal toxicity:

| | | |
|---|------------|--|
| Bis(2-hydroxy-3-tert-butyl-5-methylphenyl)methane 119-47-1 | Value type | LD50 |
| | Value | > 10,000 mg/kg |
| | Species | rat |
| | Method | not specified |
| Hydroquinone 123-31-9 | Value type | LD50 |
| | Value | > 2,000 mg/kg |
| | Species | rabbit |
| | Method | OECD Guideline 402 (Acute Dermal Toxicity) |

Skin corrosion/irritation:

| | | |
|---|---------------|--|
| Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane 105391-33-1 | Result | not irritating |
| | Exposure time | 4 h |
| | Species | rabbit |
| | Method | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Hydroquinone 123-31-9 | Result | not irritating |
| | Exposure time | 24 h |
| | Species | rabbit |
| | Method | Weight of evidence |

Serious eye damage/irritation:

| | | |
|---|---------------|---|
| Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane 105391-33-1 | Result | not irritating |
| | Exposure time | 24 h |
| | Species | rabbit |
| | Method | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |

Respiratory or skin sensitization:

| | | |
|---|-----------|--|
| Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane 105391-33-1 | Result | not sensitising |
| | Test type | Guinea pig maximisation test |
| | Species | guinea pig |
| | Method | OECD Guideline 406 (Skin Sensitisation) |
| Hydroquinone 123-31-9 | Result | sensitising |
| | Test type | Guinea pig maximisation test |
| | Species | guinea pig |
| | Method | equivalent or similar to OECD Guideline 406 (Skin Sensitisation) |
| Hydroquinone 123-31-9 | Result | 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:

| | | |
|---|---|---|
| Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane 105391-33-1 | Result | negative |
| | Type of study / Route of administration | bacterial gene mutation assay |
| | Metabolic activation / Exposure time | with and without |
| | Method | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Bis(2-hydroxy-3-tert-butyl-5-methylphenyl)methane 119-47-1 | 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) |
| Hydroquinone 123-31-9 | 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) |
| Hydroquinone 123-31-9 | 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) |
| Hydroquinone 123-31-9 | 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) |
| Hydroquinone 123-31-9 | Result | positive |
| | Type of study / Route of administration | intraperitoneal |
| | Metabolic activation / Exposure time | |
| | Species | mouse |
| Hydroquinone 123-31-9 | Method | equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| | Result | negative |
| | Type of study / Route of administration | oral: gavage |
| | Metabolic activation / Exposure time | |
| Hydroquinone 123-31-9 | Species | rat |
| | Method | equivalent or similar to OECD Guideline 478 (Genetic Toxicology: Rodent Dominant Lethal Test) |
| | Result | positive |
| | Type of study / Route of administration | intraperitoneal |
| Hydroquinone 123-31-9 | Metabolic activation / Exposure time | |
| | Species | mouse |
| | Method | equivalent or similar to OECD Guideline 483 (Mammalian Spermatogonial Chromosome Aberration Test) |

Repeated dose toxicity:

| | | |
|--------------------------|--|--|
| Hydroquinone 123-31-9 | Result | NOAEL=50 mg/kg |
| | Route of application | oral: gavage |
| | Exposure time / Frequency of treatment | 13 w5 d/w |
| | Species | rat |
| | Method | not specified |
| Hydroquinone 123-31-9 | Result | NOAEL=73.9 mg/kg |
| | Route of application | dermal |
| | Exposure time / Frequency of treatment | 13 w6 h/d, 5 d/w |
| | Species | rat |
| | Method | equivalent or similar to OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study) |

Section 12. Ecological information

General ecological information:

Biological and Chemical Oxygen Demands (BOD and COD) are insignificant., Do not empty into drains / surface water / ground water.

Ecotoxicity:

Harmful to aquatic life with long lasting effects.

Toxicity:

| | | |
|---|----------------------|---|
| Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane 105391-33-1 | Value type | LC50 |
| | Value | 0.5 mg/l |
| | Acute Toxicity Study | Fish |
| | Exposure time | 48 h |
| | Species | Oryzias latipes |
| | Method | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane 105391-33-1 | Value type | EC50 |
| | Value | > 1 - 10 mg/l |
| | Acute Toxicity Study | Daphnia |
| | Exposure time | 48 h |
| | Species | Daphnia magna |
| | Method | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Bis(2-hydroxy-3-tert-butyl-5-methylphenyl)methane 119-47-1 | Value type | EC 50 |
| | Value | > 10,000 mg/l |
| | Acute Toxicity Study | Bacteria |
| | Exposure time | 3 h |
| | Species | |
| | Method | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| Hydroquinone 123-31-9 | Value type | LC50 |
| | Value | 0.638 mg/l |
| | Acute Toxicity Study | Fish |
| | Exposure time | 96 h |
| | Species | Oncorhynchus mykiss |
| | Method | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Hydroquinone 123-31-9 | Value type | EC50 |
| | Value | 0.134 mg/l |
| | Acute Toxicity Study | Daphnia |
| | Exposure time | 48 h |
| | Species | Daphnia magna |
| | Method | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Hydroquinone 123-31-9 | Value type | EC50 |
| | Value | 0.335 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) |
| Hydroquinone 123-31-9 | Value type | EC 50 |
| | Value | 0.038 mg/l |
| | Acute Toxicity Study | Bacteria |
| | Exposure time | 30 min |
| | Species | |
| | Method | not specified |

Persistence and degradability:

| | | |
|---|----------------------|--|
| Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane 105391-33-1 | Result | not readily biodegradable. |
| | Route of application | aerobic |
| | Degradability | > 0 - < 60 % |
| | Method | OECD 301 A - F |
| Bis(2-hydroxy-3-tert-butyl-5-methylphenyl)methane 119-47-1 | Result | under test conditions no biodegradation observed |
| | Route of application | aerobic |
| | Degradability | 0 % |
| | Method | OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I)) |
| Hydroquinone 123-31-9 | Result | readily biodegradable |
| | Route of application | aerobic |
| | Degradability | 75 - 81 % |
| | Method | EU Method C.4-E (Determination of the "Ready" Biodegradability Closed Bottle Test) |

Bioaccumulative potential / Mobility in soil:

| | | |
|--|-------------------------------|-----|
| Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane | Bioconcentration factor (BCF) | 674 |
| | Exposure time | |

| | | |
|---|-------------------------------|--|
| 105391-33-1 | Species | not specified |
| | Temperature | |
| | Method | OECD Guideline 305 (Bioconcentration: Flow-through Fish Test) |
| Bis(2-hydroxy-3-tert-butyl-5-methylphenyl)methane 119-47-1 | Bioconcentration factor (BCF) | 320 - 780 |
| | Exposure time | 60 d |
| | Species | Cyprinus carpio |
| | Temperature | |
| | Method | OECD Guideline 305 E (Bioaccumulation: Flow-through Fish Test) |
| Bis(2-hydroxy-3-tert-butyl-5-methylphenyl)methane 119-47-1 | LogPow | 6.25 |
| | Temperature | 20 °C |
| | Method | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Hydroquinone 123-31-9 | LogPow | 0.59 |
| | Temperature | |
| | Method | EU Method A.8 (Partition Coefficient) |

Section 13. Disposal considerations

Product

Method of disposal: Dispose of in accordance with local and national regulations.
Collection and delivery to recycling enterprise or other registered elimination institution.

Packaging

Disposal of uncleaned packages: After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

Section 14. Transport information

Road transport ADR:

Not dangerous goods

Railroad transport RID:

Not dangerous goods

Inland water transport ADN:

Not dangerous goods

Marine transport IMDG:

Not dangerous goods

Air transport IATA:

| | |
|-------------------------------------|---|
| Class: | 9 |
| Packing group: | III |
| Packaging instructions (passenger): | 964 |
| Packaging instructions (cargo): | 964 |
| UN no.: | 3334 |
| Label: | 9 |
| Proper shipping name: | Aviation regulated liquid, n.o.s. (Cyanoacrylate ester) |
| Additional Information IATA: | Primary packs containing less than 500ml are unregulated by this mode of transport and may be shipped unrestricted. |

Section 15. Regulatory information

Regulatory Information: Workplace Safety And Health Act (Chapter 354A) Workplace Safety And Health (Approved Codes of Practice) Notification 2013 SS586 Specification for Hazard Communication for hazardous chemicals and dangerous good Part 1,2,3

Global inventory status:

| Regulatory list | Notification |
|-----------------|--------------|
| TSCA | yes |
| NDSL | yes |
| KECI (KR) | yes |
| IECSC | yes |
| NZIOC | yes |

Section 16. Other information

Disclaimer:

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