Safety Data Sheet

LOCTITE 460 BO20G EN/CH/JP

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

Product name:
LOCTITE 460 BO20G EN/CH/JP

Other means of identification:
LOCTITE 460 BO20G EN/CH/JP

Product code:
IDH271857

Recommended use of the chemical and restrictions on use

Intended use:
Cyanoacrylate

Manufacturer/Importer/Distributor Representative Company

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

Section 2. Hazards identification

GHS Classification:

Hazard Class	Hazard Category
Chronic hazards to the aquatic environment	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 1B H360
Hydroquinone 123-31-9	< 0.1 %	Acute toxicity 4; Oral H302 Serious eye damage/eye irritation 1 H318 Skin sensitizer 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. If symptoms persist, seek medical advice.

Skin contact:
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.
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.
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.

Eye contact:
If the eye is bonded closed, release eyelashes with warm water by covering with wet pad.
Keep eye covered until debonding is complete, usually within 1-3 days.
Cyanoacrylate will bond to eye protein and will cause periods of weeping which will help to debond the adhesive.
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

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), carbon dioxide (CO2) and nitrogen oxides (NOx) 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.
See advice in section 8

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

Clean-up methods:
Dispose of contaminated material as waste according to Section 13.
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.

Section 7. Handling and storage

Handling:
Avoid skin and eye contact.
See advice in section 8
Ventilation (low level) is recommended when using large volumes
Use of dispensing equipment is recommended to minimise the risk of skin or eye contact

Storage:
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 123-31-9	**Value type**	Time Weighted Average (TWA):
	mg/m³	2
	Remarks	TH OEL

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.

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.

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:	Colorless to light yellow liquid
Odor:	characteristic
Odor threshold (CA):	No data available.
pH:	Not applicable, Product reacts with water.
Melting point / freezing point:	Not applicable, Product is a liquid
Specific gravity:	No data available.
Boiling point:	> 149 °C (> 300.2 °F)
Flash point:	80 - 93.3 °C (176 - 199.94 °F)
(None)	
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:	< 0.2 mm hg
(NoneNoneno method / method unknown; 50 °C (122 °F))	< 30.0000000 Pa
	< 700 mbar
Vapor density:	> 1
Density:	1.1 g/cm3
Solubility:	Polymerises in presence of water. (20 °C)
Partition coefficient: n-octanol/water:	No data available.
Auto ignition:	No data available.
Decomposition temperature:	No data available.
Viscosity:	25.0 - 55.0 mPa.s (Cone and plate; Shear gradient: 3,000 s-1; Method: ;; LCT STM 740; cone & plate viscosity)
VOC content: (2010/75/EC)	< 3 %

Section 10. Stability and reactivity

Chemical stability:
Stable under recommended storage conditions.
Possibility of hazardous reactions:
Rapid exothermic polymerization will occur in the presence of water, amines, alkalis and alcohols.
Conditions to avoid:
Stable under normal conditions of storage and use.
Hazardous decomposition products:
None if used for intended purpose.

Section 11. Toxicological information

General toxicological information:	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
	Method	equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Hydroquinone 123-31-9	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	rat
	Method	equivalent or similar to OECD Guideline 478 (Genetic Toxicology: Rodent Dominant Lethal Test)
Hydroquinone 123-31-9	Result	positive
	Type of study / Route of administration	intraperitoneal
	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: Do not empty into drains / surface water / ground water.

Ecotoxicity: H412 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	LC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oryzias latipes
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Bis(2-hydroxy-3-tert-butyl-5-methylphenyl)methane 119-47-1	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)
Bis(2-hydroxy-3-tert-butyl-5-methylphenyl)methane 119-47-1	Value type	EC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata (reported as Selenastrum capricornutum)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata (reported as Selenastrum capricornutum)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Bis(2-hydroxy-3-tert-butyl-5-methylphenyl)methane 119-47-1	Value type	EC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge
	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" BiodegradabilityClosed Bottle Test)

Bioaccumulative potential / Mobility in soil:

Bis(3-ethyl-5-methyl-4-maleimidophenyl)methane 105391-33-1	Bioconcentration factor (BCF)	674
	Exposure time	
	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.

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:
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:
Not dangerous goods

Section 15. Regulatory information

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

Global inventory status:

Regulatory list	Notification
TSCA	yes
DSL	yes
KECI (KR)	yes
ISHL (JP)	yes
IECSC	yes
TCSI	yes

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.
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