



## Safety Data Sheet

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Loctite 416

SDS No. : 153534

V001.11

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

**Product name:** Loctite 416

**Other means of identification:** Loctite 416

**Product code:** IDH837624

**Recommended use of the chemical and restrictions on use**

**Intended use:** Adhesive

**Identification of manufacturer, importer or distributor**

**Importer:** Henkel Malaysia Sdn Bhd 46th Floor, Menara TM, Jalan Pantai Baharu, 59200 Kuala Lumpur, Malaysia. Phone :+ 603 22461000 Fax : + 60322461188

**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:**

<u>Hazard Class</u>	<u>Hazard Category</u>	<u>Target organ</u>
Skin corrosion/irritation	Category 2	
Serious eye damage/eye irritation	Category 2	
Toxic to reproduction	Category 2	
Specific target organ toxicity - single exposure	Category 3	respiratory tract irritation

**GHS label elements:**

**Hazard pictogram:**



**Signal word:**

Warning

**Hazard statement:** H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H361 Suspected of damaging fertility or the unborn child.

**Precaution:**

**Prevention:** P201 Obtain special instructions before use.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 Wash hands thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

**Response:** P302+P352 IF ON SKIN: Wash with plenty of water.  
P304+P340+P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+P313 IF exposed or concerned: Get medical advice/ attention.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P337+P313 If eye irritation persists: Get medical advice/attention.  
P362+P364 Take off contaminated clothing and wash it before reuse.

**Storage:** P403+P233 Store in a well-ventilated place. Keep container tightly closed.

**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
Ethyl 2-cyanoacrylate 7085-85-0	60- 100 %	Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2 H319 Specific target organ toxicity - single exposure 3 H335
Bis(2-hydroxy-3-tert-butyl-5-methylphenyl)methane 119-47-1	0.1- 1 %	Toxic to reproduction 2 H361
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

#### Section 4. First aid measures

<b>Inhalation:</b>	Move to fresh air, consult doctor if complaint persists.
<b>Skin contact:</b>	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.
<b>Eye contact:</b>	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.
<b>Ingestion:</b>	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).
<b>Indication of immediate medical attention and special treatment needed:</b>	See section: Description of first aid measures

#### Section 5. Fire fighting measures

<b>Suitable extinguishing media:</b>	Foam, extinguishing powder, carbon dioxide. Fine water spray
<b>Special protection equipment and precautions for firefighters:</b>	Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA).
<b>Hazardous combustion products:</b>	Oxides of carbon, oxides of nitrogen, irritating organic vapors.

#### Section 6. Accidental release measures

<b>Personal precautions:</b>	Ensure adequate ventilation.
<b>Environmental precautions:</b>	Do not let product enter drains.
<b>Clean-up methods:</b>	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

<b>Handling:</b>	Ventilation (low level) is recommended when using large volumes Use of dispensing equipment is recommended to minimise the risk of skin or eye contact
<b>Storage:</b>	For optimum shelf life store in original containers under refrigerated conditions at 2 - 8°C (35.6 - 46.4 °F)

**Section 8. Exposure controls / personal protection****Components with specific control parameters for workplace:**

ETHYL CYANOACRYLATE 7085-85-0	<b>Value type</b>	Time Weighted Average (TWA):
	<b>ppm</b>	0.2
	<b>Remarks</b>	ACGIH
ETHYL CYANOACRYLATE 7085-85-0	<b>Value type</b>	Time Weighted Average (TWA):
	<b>ppm</b>	0.2
	<b>Remarks</b>	MY OEL
HYDROQUINONE 123-31-9	<b>Value type</b>	Time Weighted Average (TWA):
	<b>mg/m<sup>3</sup></b>	1
	<b>Remarks</b>	ACGIH
HYDROQUINONE 123-31-9	<b>Value type</b>	Time Weighted Average (TWA):
	<b>mg/m<sup>3</sup></b>	2
	<b>Remarks</b>	MY 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:**

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;  $\geq$  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;  $\geq$  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.

The use of chemical resistant gloves such as Neoprene or Natural Rubber is recommended

**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.

**Hygienic measures:**

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

### Section 9. Physical and chemical properties

<b>Appearance:</b>	clear liquid
<b>Odor:</b>	irritating
<b>Odor threshold (CA):</b>	No data available.
<b>pH:</b>	No data available.
<b>Melting point / freezing point:</b>	No data available.
<b>Specific gravity:</b>	1.1
<b>Boiling point:</b>	> 149 °C (> 300.2 °F)
<b>Flash point:</b> (Tagliabue closed cup)	80 - 93 °C (176 - 199.4 °F)
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	No data available.
<b>Lower explosive limit:</b>	No data available.
<b>Upper explosive limit:</b>	No data available.
<b>Vapor pressure:</b> (; 25 °C (77 °F)no method; 50 °C (122 °F))	< 0.6 mbar < 700 mbar
<b>Vapor density:</b>	No data available.
<b>Density:</b>	No data available.
<b>Solubility:</b>	No data available.
<b>Partition coefficient: n- octanol/water:</b>	No data available.
<b>Auto ignition:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>VOC content:</b> (2010/75/EC)	< 3 %

### Section 10. Stability and reactivity

<b>Reactivity/Incompatible materials:</b>	Rapid exothermic polymerization will occur in the presence of water, amines, alkalis and alcohols.
<b>Chemical stability:</b>	Stable under recommended storage conditions.
<b>Conditions to avoid:</b>	Stable under normal conditions of storage and use.
<b>Hazardous decomposition products:</b>	None if used for intended purpose.

### Section 11. Toxicological information

Symptoms of Overexposure: EYE: Irritation, conjunctivitis.  
SKIN: Redness, inflammation.  
RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

**Acute oral toxicity:**

Ethyl 2-cyanoacrylate 7085-85-0	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:**

Ethyl 2-cyanoacrylate 7085-85-0	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rabbit
	Method	OECD Guideline 402 (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

**Skin corrosion/irritation:**

Ethyl 2-cyanoacrylate 7085-85-0	Result	slightly irritating
	Exposure time	24 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

**Serious eye damage/irritation:**

Ethyl 2-cyanoacrylate 7085-85-0	Result	irritating
	Exposure time	72 h
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

**Respiratory or skin sensitization:**

Ethyl 2-cyanoacrylate 7085-85-0	Result	not sensitising
	Test type	
	Species	guinea pig
	Method	not specified
Hydroquinone 123-31-9	Result	sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	not specified

**Germ cell mutagenicity:**

Ethyl 2-cyanoacrylate 7085-85-0	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	
	Method	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Ethyl 2-cyanoacrylate 7085-85-0	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)
Ethyl 2-cyanoacrylate 7085-85-0	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)
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	EU Method B.13/14 (Mutagenicity)

**Repeated dose toxicity:**

Hydroquinone 123-31-9	Result	NOAEL=>= 250 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	14 days 5 days/week. 12 doses
	Species	rat
	Method	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
Hydroquinone 123-31-9	Result	LOAEL=<= 500 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	14 days 5 days/week. 12 doses
	Species	rat
	Method	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)

**Section 12. Ecological information****Ecotoxicity:**

Do not empty into drains / surface water / ground water.

**Toxicity:**

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: Pseudokirchnerella subcapitata)

Hydroquinone 123-31-9	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC 50
	Value	0.038 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	30 min
	Species	
	Method	not specified

**Persistence and degradability:**

Ethyl 2-cyanoacrylate 7085-85-0	Result	
	Route of application	aerobic
	Degradability	57 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
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:**

Ethyl 2-cyanoacrylate 7085-85-0	LogPow	0.776
	Temperature	22 °C
	Method	EU Method A.8 (Partition Coefficient)
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:**

Cured adhesive: Dispose of as water insoluble non-toxic solid chemical in authorised landfill or incinerate under controlled conditions.  
Dispose of in accordance with local and national regulations.  
Contribution of this product to waste is very insignificant in comparison to article in which it is used

**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.  
Disposal must be made according to official regulations.

**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:	Primary packs containing less than 500ml are unregulated by this mode of transport and may be shipped unrestricted.

### Section 15. Regulatory information

**Regulatory Information:** Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/213]  
Industry Code of Practice on Chemicals Classification and Hazard Communication

**Global inventory status:**

Regulatory list	Notification
TSCA	yes
AICS	yes
NDSL	yes
ENCS (JP)	yes
KECI (KR)	yes
PICCS (PH)	yes
IECSC	yes
ISHL (JP)	yes
NZIOC	yes

### Section 16. Other information

**Disclaimer:** 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.