Safety Data Sheet according to (EC) No 1907/2006

SDS No. : 427627
V004.2

LOCTITE 401

Revision: 15.07.2015
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Replaces version from: 24.03.2015

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
LOCTITE 401

Contains:
Ethyl 2-cyanoacrylate

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use:
Adhesive

1.3. Details of the supplier of the safety data sheet
Henkel Limited
2 Bishop Square Business Park
AL109EY Herfordshire Hatfield

Great Britain

Phone: +44 1606 593933
Fax-no.: +44 1606 863762

ua-productsafety.uk@uk.henkel.com

1.4. Emergency telephone number
24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Skin irritation	Category 2
H315 Causes skin irritation.	
Serious eye irritation	Category 2
H319 Causes serious eye irritation.	
Specific target organ toxicity - single exposure	Category 3
H335 May cause respiratory irritation.	
Target organ: respiratory tract irritation	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Signal word:	Warning
Hazard statement:	H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation.
Supplemental information	EUH202 Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children.
Precautionary statement: Prevention	P261 Avoid breathing vapours. P280 Wear protective gloves/eye protection.
Precautionary statement: 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.
Precautionary statement: Disposal	P501 Dispose of waste and residues in accordance with local authority requirements.

2.3. Other hazards
None if used properly.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General chemical description:
Cyanoacrylate Adhesive

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Ethyl 2-cyanoacrylate 7085-85-0	230-391-5 01-2119527766-29	50- 100 %	Eye Irrit. 2 H319 STOT SE 3 H335 Skin Irrit. 2 H315
Hydroquinone 123-31-9	204-617-8 01-2119524016-51	0,01- < 0,1 %	Aquatic Acute 1 H400 Aquatic Chronic 1 H410 Carc. 2 H351 Muta. 2 H341 Acute Tox. 4; Oral H302 Eye Dam. 1 H318 Skin Sens. 1 H317 M factor: 10

For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.

SECTION 4: First aid measures

4.1. Description of 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).

4.2. Most important symptoms and effects, both acute and delayed
EYE: Irritation, conjunctivitis.

SKIN: Redness, inflammation.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

4.3. Indication of any immediate medical attention and special treatment needed
See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media:
Foam, extinguishing powder, carbon dioxide.
Fine water spray

Extinguishing media which must not be used for safety reasons:
None known

5.2. Special hazards arising from the substance or mixture
In case of fire, keep containers cool with water spray.
Oxides of carbon, oxides of nitrogen, irritating organic vapors.

5.3. Advice for firefighters
Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA).

Additional information:
In case of fire, keep containers cool with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation.

6.2. Environmental precautions
Do not let product enter drains.

6.3. Methods and material for containment and cleaning up
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.

6.4. Reference to other sections
See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe 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

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

7.2. Conditions for safe storage, including any incompatibilities
For optimum shelf life store in original containers under refrigerated conditions at 2 - 8°C (35.6 - 46.4 °F)

7.3. Specific end use(s)
Adhesive

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

Ingredient [Regulated substance]	ppm	mg/m³	Value type	Short term exposure limit category / Remarks	Regulatory list
Ethyl 2-cyanoacrylate 7085-85-0 [ETHYL CYANOACRYLATE]	0,3	1,5	Short Term Exposure Limit (STEL):		EH40 WEL
Hydroquinone 123-31-9 [HYDROQUINONE]		0,5	Time Weighted Average (TWA):		EH40 WEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Hydroquinone 123-31-9	aqua (freshwater)					0,114 µg/L	
Hydroquinone 123-31-9	aqua (marine water)					0,0114 µg/L	
Hydroquinone 123-31-9	sediment (freshwater)					0,98 µg/kg	
Hydroquinone 123-31-9	sediment (marine water)					0,097 µg/kg	
Hydroquinone 123-31-9	aqua (intermittent releases)					0,00134 mg/L	
Hydroquinone 123-31-9	soil					0,129 µg/kg	
Hydroquinone 123-31-9	STP					0,71 mg/L	

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Ethyl 2-cyanoacrylate 7085-85-0	Workers	Inhalation	Long term exposure - local effects		9,25 mg/m3	
Ethyl 2-cyanoacrylate 7085-85-0	Workers	Inhalation	Long term exposure - systemic effects		9,25 mg/m3	
Ethyl 2-cyanoacrylate 7085-85-0	general population	Inhalation	Long term exposure - local effects		9,25 mg/m3	
Ethyl 2-cyanoacrylate 7085-85-0	general population	Inhalation	Long term exposure - systemic effects		9,25 mg/m3	
Hydroquinone 123-31-9	Workers	Dermal	Long term exposure - systemic effects		128 mg/kg bw/day	
Hydroquinone 123-31-9	Workers	Inhalation	Long term exposure - systemic effects		7 mg/m3	
Hydroquinone 123-31-9	Workers	Inhalation	Long term exposure - local effects		1 mg/m3	
Hydroquinone 123-31-9	general population	Dermal	Long term exposure - systemic effects		64 mg/kg bw/day	
Hydroquinone 123-31-9	general population	Inhalation	Long term exposure - systemic effects		1,74 mg/m3	
Hydroquinone 123-31-9	general population	Inhalation	Long term exposure - local effects		0,5 mg/m3	

Biological Exposure Indices:
None

8.2. Exposure controls:

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

Hand protection:
Polyethylene or polypropylene gloves are recommended when using large volumes.
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.

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.
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.

Skin protection:
Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	liquid
	colourless to yellowish
Odour threshold	No data available / Not applicable
pH	No data available / Not applicable
Initial boiling point	> 149 °C (> 300.2 °F)
Flash point	80 - 93 °C (176 - 199.4 °F)
Decomposition temperature	No data available / Not applicable
Vapour pressure (50 °C (122 °F))	< 700 mbar
Density ()	1,1 g/cm3
Bulk density	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative) (Solvent: Water)	Polymerises in presence of water.
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	No data available / Not applicable
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity
Rapid exothermic polymerization will occur in the presence of water, amines, alkalis and alcohols.

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
See section reactivity

10.4. Conditions to avoid
Stable under normal conditions of storage and use.

10.5. Incompatible materials
See section reactivity

10.6. Hazardous decomposition products
None if used for intended purpose.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

General toxicological information:
The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

STOT-single exposure:
May cause respiratory irritation.

Oral toxicity:
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.

Inhalative toxicity:
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

Skin irritation:
Causes skin irritation.
Bonds skin in seconds. Considered to be of low toxicity: acute dermal LD50 (rabbit)>2000mg/kg
Due to polymerisation at the skin surface allergic reaction is unlikely to occur

Eye irritation:
Causes serious eye irritation.
Liquid product will bond eyelids. In a dry atmosphere (RH<50%) vapours may cause irritation and lachrymatory effect

Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	LD50	> 5.000 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
Hydroquinone 123-31-9	LD50	367 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)

Acute dermal toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	LD50	> 2.000 mg/kg	dermal		rabbit	OECD Guideline 402 (Acute Dermal Toxicity)

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	slightly irritating	24 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	irritating	72 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	not sensitising		guinea pig	
Hydroquinone 123-31-9	sensitising	Guinea pig maximisation test	guinea pig	

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	negative	bacterial reverse mutation assay (e.g Ames test)			OECD Guideline 471 (Bacterial Reverse Mutation Assay)
	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Hydroquinone 123-31-9	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		EU Method B.13/14 (Mutagenicity)

Repeated dose toxicity

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Hydroquinone 123-31-9	LOAEL=<= 500 mg/kg	oral: gavage	14 days5 days/week. 12 doses	rat	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
Hydroquinone 123-31-9	NOAEL=>= 250 mg/kg	oral: gavage	14 days5 days/week. 12 doses	rat	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)

SECTION 12: Ecological information

General ecological information:
Biological and Chemical Oxygen Demands (BOD and COD) are insignificant.
The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

12.1. Toxicity

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

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Hydroquinone 123-31-9	LC50	0,638 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Hydroquinone 123-31-9	EC50	0,134 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Hydroquinone 123-31-9	EC50	0,335 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydroquinone 123-31-9	NOEC	0,0057 mg/l	chronic Daphnia	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

12.2. Persistence and degradability

Persistence and Biodegradability:
No data available.

Hazardous components CAS-No.	Result	Route of application	Degradability	Method

Ethyl 2-cyanoacrylate 7085-85-0		aerobic	57 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Hydroquinone 123-31-9	readily biodegradable	aerobic	75 - 81 %	EU Method C.4-E (Determination of the "Ready" BiodegradabilityClosed Bottle Test)

12.3. Bioaccumulative potential / 12.4. Mobility in soil

Mobility:
Cured adhesives are immobile.

Bioaccumulative potential:
No data available.

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
Ethyl 2-cyanoacrylate 7085-85-0	0,776				22 °C	EU Method A.8 (Partition Coefficient)
Hydroquinone 123-31-9	0,59					EU Method A.8 (Partition Coefficient)

12.5. Results of PBT and vPvB assessment

Hazardous components CAS-No.	PBT/vPvB
Hydroquinone 123-31-9	Not fulfilling PBT (persistent/bioaccummulative/toxic) criteria

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product 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

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.

Waste code

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances
The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

SECTION 14: Transport information

14.1. UN number

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	3334

14.2. UN proper shipping name

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Aviation regulated liquid, n.o.s. (Cyanoacrylate ester)

14.3. Transport hazard class(es)

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	9

14.4. Packaging group

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	III

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	Primary packs containing less than 500ml are unregulated by this mode of transport and may be shipped unrestricted.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

VOC content (VOCV 814.018 VOC regulation CH)	0 %
VOC content (2010/75/EC)	< 3 %

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text
of all abbreviations indicated by codes in this safety data sheet are as follows:

H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Further information:

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.

Label elements (DPD):

Xi - Irritant



Risk phrases:

R36/37/38 Irritating to eyes, respiratory system and skin.

Safety phrases:

S23 Do not breathe vapour.
S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Additional labeling:

Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children.

Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.

Annex - Exposure Scenarios:

Exposure Scenarios for ethyl 2-cyanoacrylate can be downloaded under the following link:
http://mymsds.henkel.com/mymsds/.470833..en.ANNEX_DE.15743123.0.DE.pdf
Alternatively they can be accessed on the internet site www.mymsds.henkel.com by entering number 470833.