

LOCTITE 493

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

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

1.1. Product identifier

LOCTITE 493

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use: Cyanoacrylate

1.3. Details of the supplier of the safety data sheet

Henkel Ltd Adhesives Wood Lane End

HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 (1442) 278000 Fax-no.: +44 (1442) 278071

ua-productsafety.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:



Contains

Methyl 2-cyanoacrylate

Signal word: Warning

Hazard statement: H315 Causes skin irritation.

H319 Causes serious eye irritation. H335 May cause respiratory irritation.

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

Precautionary statement: P261 Avoid breathing vapors.

Prevention P280 Wear protective gloves/eye protection.

Precautionary statement: P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove

Response 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 contents/container in accordance with national regulation.

2.3. Other hazards

None if used properly.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

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	EC Number	content	Classification
CAS-No.	REACH-Reg No.		
Methyl 2-cyanoacrylate	205-275-2	50- 100 %	Eye Irrit. 2
137-05-3	01-2120096139-47		H319
			STOT SE 3
			H335
			Skin Irrit. 2
			H315
Hydroquinone	204-617-8	0,01-< 0,1 %	Aquatic Acute 1
123-31-9	01-2119524016-51		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 (Acute Aquat Tox): 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 the event of a fire, carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx) can be released.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

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.

Avoid skin and eye contact.

Wear protective equipment.

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:

Good industrial hygiene practices should be observed.

Do not eat, drink or smoke while working.

Wash hands before work breaks and after finishing work.

7.2. Conditions for safe storage, including any incompatibilities

Refer to Technical Data Sheet

7.3. Specific end use(s)

Cyanoacrylate

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for

Great Britain

Ingredient [Regulated substance]	ppm	mg/m ³	V 1	Short term exposure limit category / Remarks	Regulatory list
Mecrilate 137-05-3 [METHYL CYANOACRYLATE]	0,3	1,4	Short Term Exposure Limit (STEL):	15 minutes	EH40 WEL
Hydroquinone 123-31-9 [HYDROQUINONE]		0,5	Time Weighted Average (TWA):		EH40 WEL

Occupational Exposure Limits

Valid for

Ireland

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Mecrilate 137-05-3 [MECRYLATE]	1		Short Term Exposure Limit (STEL):	15 minutes	IR_OEL
Mecrilate 137-05-3 [MECRYLATE]	0,2		Time Weighted Average (TWA):		IR_OEL
Hydroquinone 123-31-9 [HYDROQUINONE]		0,5	Time Weighted Average (TWA):		IR_OEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Ex Compartment pe	Value				Remarks
		mg/l	ppm	mg/kg	others	
Hydroquinone 123-31-9	aqua (freshwater)	0,00057 mg/l				
Hydroquinone 123-31-9	aqua (marine water)	0,000057 mg/l				
Hydroquinone 123-31-9	sediment (freshwater)			0,0049 mg/kg		
Hydroquinone 123-31-9	sediment (marine water)			0,00049 mg/kg		
Hydroquinone 123-31-9	aqua (intermittent releases)	0,00134 mg/l				
Hydroquinone 123-31-9	Soil			0,00064 mg/kg		
Hydroquinone 123-31-9	sewage treatment plant (STP)	0,71 mg/l				

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Hydroquinone 123-31-9	Workers	dermal	Long term exposure - systemic effects		3,33 mg/kg	
Hydroquinone 123-31-9	Workers	inhalation	Long term exposure - systemic effects		2,1 mg/m3	
Hydroquinone 123-31-9	General population	dermal	Long term exposure - systemic effects		1,66 mg/kg	
Hydroquinone 123-31-9	General population	inhalation	Long term exposure - systemic effects		1,05 mg/m3	
Hydroquinone 123-31-9	General population	oral	Long term exposure - systemic effects		0,6 mg/kg	

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/extraction.

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:

Protective eye equipment should conform to EN166.

Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.

Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Wear suitable protective clothing.

Advices to personal protection equipment:

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance liauid

Liquid

Colorless, Straw Odor

Irritating

Odour threshold No data available / Not applicable

No data available / Not applicable No data available / Not applicable Melting point Solidification temperature No data available / Not applicable

> 149 °C (> 300.2 °F) Initial boiling point

80 - 93 °C (176 - 199.4 °F); None Flash point No data available / Not applicable Evaporation rate Flammability No data available / Not applicable Explosive limits No data available / Not applicable

Vapour pressure 0,3 mbar Vapour pressure < 700 mbar

(50 °C (122 °F))

Relative vapour density: No data available / Not applicable

Density 1,1 g/cm3

(20 °C (68 °F))

Bulk density No data available / Not applicable No data available / Not applicable Solubility

Solubility (qualitative) Miscible (Solvent: Acetone)

Solubility (qualitative) Polymerises in presence of water.

(Solvent: Water)

Partition coefficient: n-octanol/water No data available / Not applicable No data available / Not applicable Auto-ignition temperature No data available / Not applicable Decomposition temperature

Viscosity
No data available / Not applicable
Viscosity (kinematic)
No data available / Not applicable
Explosive properties
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

None if used properly.

10.6. Hazardous decomposition products

None if used for intended purpose.

SECTION 11: Toxicological information

$\label{lem:constraint} \textbf{General toxicological information:}$

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

11.1. Information on toxicological effects

Acute oral toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Methyl 2-cyanoacrylate 137-05-3	LD50	> 4.440 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
Hydroquinone 123-31-9	LD50	367 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)

Acute dermal toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Methyl 2-cyanoacrylate 137-05-3	LD50	> 2.000 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
Hydroquinone 123-31-9	LD50	> 2.000 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)

Acute inhalative toxicity:

No data available.

Skin corrosion/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

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Methyl 2-cyanoacrylate 137-05-3	irritating	24 h	rabbit	not specified
Hydroquinone 123-31-9	not irritating	24 h	rabbit	Weight of evidence

Serious eye damage/irritation:

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

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Methyl 2-cyanoacrylate 137-05-3	irritating		rabbit	not specified

Respiratory or skin sensitization:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Species	Method
Methyl 2-cyanoacrylate 137-05-3	not sensitising		guinea pig	not specified
Hydroquinone 123-31-9	sensitising	Guinea pig maximisation test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
Hydroquinone 123-31-9	sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances	Result	Type of study /	Metabolic	Species	Method
CAS-No.		Route of	activation /		
		administration	Exposure time		
Hydroquinone	negative	bacterial reverse	with and without		equivalent or similar to OECD
123-31-9		mutation assay (e.g			Guideline 471 (Bacterial
		Ames test)			Reverse Mutation Assay)
Hydroquinone	negative	in vitro mammalian	with and without		OECD Guideline 473 (In vitro
123-31-9		chromosome			Mammalian Chromosome
		aberration test			Aberration Test)
Hydroquinone	positive	mammalian cell	with and without		OECD Guideline 476 (In vitro
123-31-9		gene mutation assay			Mammalian Cell Gene
					Mutation Test)
Hydroquinone	positive	intraperitoneal		mouse	equivalent or similar to OECD
123-31-9					Guideline 474 (Mammalian
					Erythrocyte Micronucleus
					Test)
Hydroquinone	negative	oral: gavage		rat	equivalent or similar to OECD
123-31-9					Guideline 478 (Genetic
					Toxicology: Rodent Dominant
					Lethal Test)
Hydroquinone	positive	intraperitoneal		mouse	equivalent or similar to OECD
123-31-9					Guideline 483 (Mammalian
					Spermatogonial Chromosome
					Aberration Test)

Carcinogenicity

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
Hydroquinone 123-31-9	carcinogenic	oral: gavage	103 w 5 d/w	rat	male/female	equivalent or similar OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
Hydroquinone 123-31-9	carcinogenic	oral: gavage	103 w 5 d/w	mouse	female	equivalent or similar OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
Hydroquinone 123-31-9	NOAEL P 15 mg/kg NOAEL F1 150 mg/kg NOAEL F2 150 mg/kg	Two generation study	oral: gavage	rat	EPA OTS 798.4700 (Reproduction and Fertility Effects)

STOT-single exposure:

No data available.

STOT-repeated exposure::

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances	Result / Value	Route of	Exposure time /	Species	Method
CAS-No.		application	Frequency of		
			treatment		
Methyl 2-cyanoacrylate	NOAEL > 200 mg/kg	oral: feed	90 d	rat	OECD Guideline 408
137-05-3			daily		(Repeated Dose 90-Day
					Oral Toxicity in Rodents)
Hydroquinone	NOAEL 50 mg/kg	oral: gavage	13 w	rat	not specified
123-31-9			5 d/w		
Hydroquinone	NOAEL 73,9 mg/kg	dermal	13 w	rat	equivalent or similar to
123-31-9			6 h/d, 5 d/w		OECD Guideline 411
					(Subchronic Dermal
					Toxicity: 90-Day Study)

Aspiration hazard:

No data available.

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.

12.1. Toxicity

Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.		Value	Exposure time	Species	Method
Hydroquinone	type LC50	0.638 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish,
J 1	LC30	0,036 mg/1	90 11	, ,	· · · ·
123-31-9					Acute Toxicity Test)

Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances	Value	Value	Exposure time	Species	Method
CAS-No.	type				
Hydroquinone	EC50	0,134 mg/l	48 h	Daphnia magna	OECD Guideline 202
123-31-9					(Daphnia sp. Acute
					Immobilisation Test)

Chronic toxicity to aquatic invertebrates

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Hydroquinone	NOEC	0,0057 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia
123-31-9					magna, Reproduction Test)

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances	Value	Value	Exposure time	Species	Method
CAS-No.	type				
Hydroquinone	EC50	0,335 mg/l	72 h	Selenastrum capricornutum	OECD Guideline 201 (Alga,
123-31-9				(new name: Pseudokirchneriella	Growth Inhibition Test)
				subcapitata)	

Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances	Value	Value	Exposure time	Species	Method
CAS-No.	type				
Hydroquinone	EC 50	0,038 mg/l	30 min		not specified
123-31-9					_

12.2. Persistence and degradability

Hazardous substances	Result	Test type	Degradability	Exposure	Method
CAS-No.				time	
Methyl 2-cyanoacrylate	readily biodegradable	aerobic	0 %	0 h	OECD Guideline 301 A (new
137-05-3					version) (Ready Biodegradability:
					DOC Die Away Test)
Hydroquinone	readily biodegradable	aerobic	75 - 81 %	30 d	EU Method C.4-E (Determination
123-31-9					of the "Ready"
					BiodegradabilityClosed Bottle
					Test)

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

Cured adhesives are immobile.

Hazardous substances	LogPow	Temperature	Method
CAS-No.			
Hydroquinone	0,59		EU Method A.8 (Partition Coefficient)
123-31-9			

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
Hydroquinone	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very
123-31-9	Bioaccumulative (vPvB) 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

IA1A 5554

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. Packing 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 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 (2010/75/EC)

< 3.00 %

15.2. Chemical safety assessment

A chemical safety assessment has not 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:

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