



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

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Loctite 4105

sds no. : 173363  
V002.3

Revision: 12.04.2013  
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### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Loctite 4105

#### 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 (DPD):

Xi - Irritant

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

#### 2.2. Label elements

**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.

Contains Phthalic anhydride, Hydroquinone. May produce an allergic reaction.

**2.3. Other hazards**

None if used properly.

**SECTION 3: Composition/information on ingredients**

**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	> 80- < 100 %	Serious eye irritation 2 H319 Specific target organ toxicity - single exposure 3 H335 Skin irritation 2 H315
Hydroquinone 123-31-9	204-617-8	> 0,1- < 0,5 %	Carcinogenicity 2 H351 Skin sensitizer 1 H317 Acute toxicity 4; Oral H302 Germ cell mutagenicity 2 H341 Serious eye damage 1 H318 Acute hazards to the aquatic environment 1 H400
Phthalic anhydride 85-44-9	201-607-5	> 0,1- < 0,5 %	Acute toxicity 4; Oral H302 Serious eye damage 1 H318 Skin sensitizer 1 H317 Specific target organ toxicity - single exposure 3 H335 Skin irritation 2 H315 Respiratory sensitizer 1 H334

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.

**Declaration of ingredients according to DPD (EC) No 1999/45:**

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Ethyl 2-cyanoacrylate 7085-85-0	230-391-5 01-2119527766-29	> 80 - < 100 %	Xi - Irritant; R36/37/38
Hydroquinone 123-31-9	204-617-8	> 0,1 - < 0,5 %	Xi - Irritant; R41 Mutagen category 3.; R68 N - Dangerous for the environment; R50 carcinogenic, category 3; R40 Xn - Harmful; R22 R43
Phthalic anhydride 85-44-9	201-607-5	> 0,1 - < 0,5 %	Xi - Irritant; R37/38, R41 Xn - Harmful; R22 R42/43

For full text of the R-Phrases indicated by codes 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) and carbon dioxide (CO<sub>2</sub>) can be released.  
In case of fire, keep containers cool with water spray.

**5.3. Advice for firefighters**

Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA).

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation.  
Avoid skin and eye contact.

**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 chapter 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.  
Wash hands before work breaks and after finishing work.  
Do not eat, drink or smoke while working.

### 7.2. Conditions for safe storage, including any incompatibilities

Ensure good ventilation/extraction.  
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	ppm	mg/m <sup>3</sup>	Type	Category	Remarks
ETHYL CYANOACRYLATE 7085-85-0	0,3	1,5	Short Term Exposure Limit (STEL):		EH40 WEL
HYDROQUINONE 123-31-9		0,5	Time Weighted Average (TWA):		EH40 WEL
PHTHALIC ANHYDRIDE 85-44-9		12	Short Term Exposure Limit (STEL):		EH40 WEL
PHTHALIC ANHYDRIDE 85-44-9		4	Time Weighted Average (TWA):		EH40 WEL

#### 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	worker	inhalation	Long term exposure - local effects		9,25 mg/m <sup>3</sup>	
Ethyl 2-cyanoacrylate 7085-85-0	worker	inhalation	Long term exposure - systemic effects		9,25 mg/m <sup>3</sup>	
Ethyl 2-cyanoacrylate 7085-85-0	general population	inhalation	Long term exposure - local effects		9,25 mg/m <sup>3</sup>	
Ethyl 2-cyanoacrylate 7085-85-0	general population	inhalation	Long term exposure - systemic effects		9,25 mg/m <sup>3</sup>	

#### 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:**

The use of chemical resistant gloves such as Nitrile is recommended.

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:**

Wear protective glasses.

**Skin protection:**

Wear suitable protective clothing.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Appearance	Liquid black
Odor	Irritating
Odour threshold	No data available / Not applicable
pH	No data available / Not applicable
Initial boiling point	> 149 °C (> 300.2 °F)
Flash point	80 - 93,3 °C (176 - 199.94 °F); Tagliabue closed cup
Decomposition temperature	No data available / Not applicable
Vapour pressure (25 °C (77 °F))	< 0,6 mbar
Density (20 °C (68 °F))	1,1 g/cm <sup>3</sup>
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**

None if used properly.

**10.6. Hazardous decomposition products**

carbon oxides.

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****General toxicological information:**

The preparation is classified based on the conventional method outlined in Article 6(1)(a) of Directive 1999/45/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

**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:**

Irritating to respiratory system

Prolonged exposure to high concentrations of vapours may lead to chronic effects in sensitive individuals

In dry atmosphere with &lt; 50% humidity, vapours may irritate the eyes and respiratory system

**Skin irritation:**

Irritating to the skin.

Bonds skin in seconds. Considered to be of low toxicity: acute dermal LD50 (rabbit)&gt;2000mg/kg

Due to polymerisation at the skin surface allergic reaction is unlikely to occur

**Eye irritation:**

Irritating to eyes.

Liquid product will bond eyelids. In a dry atmosphere (RH&lt;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	> 375 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
Phthalic anhydride 85-44-9	LD50	1.530 mg/kg	oral		rat	
Phthalic anhydride 85-44-9	LD50	2.500 - 5.000 mg/kg			rat	

**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)
Phthalic anhydride 85-44-9	LD50	> 10.000 mg/kg	dermal		rabbit	

**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)
Phthalic anhydride 85-44-9	highly irritating		rabbit	

**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	
Phthalic anhydride 85-44-9	sensitising	Mouse local lymphnode assay (LLNA)	mouse	
Phthalic anhydride 85-44-9	sensitising		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	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
	negative	bacterial reverse mutation assay (e.g Ames test)			OECD Guideline 471 (Bacterial Reverse Mutation Assay)
	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)
Phthalic anhydride 85-44-9	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		

**Repeated dose toxicity**

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Hydroquinone 123-31-9	NOAEL=>= 250 mg/kg	oral: gavage	14 days 5 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 preparation is classified based on the conventional method outlined in Article 6(1)(a) of Directive 1999/45/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	0,17 mg/l	Fish	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)
Hydroquinone 123-31-9	EC50	0,29 mg/l	Daphnia	48 h	Daphnia magna	
Hydroquinone 123-31-9	EC50	0,335 mg/l	Algae	3 d	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Phthalic anhydride 85-44-9	LC50	313 mg/l	Fish	48 h	Leuciscus idus	

## 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" Biodegradability) Closed Bottle Test)
Phthalic anhydride 85-44-9		aerobic	99 %	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening 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	1,03					
Phthalic anhydride 85-44-9	1,6					

## 12.5. Results of PBT and vPvB assessment

No data available.

## 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.

**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
ADNR	Not dangerous goods
IMDG	Not dangerous goods
IATA	3334

**14.2. UN proper shipping name**

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

**14.4. Packaging group**

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

**14.5. Environmental hazards**

ADR	not applicable
RID	not applicable
ADNR	not applicable
IMDG	not applicable
IATA	not applicable

**14.6. Special precautions for user**

ADR	not applicable
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RID	not applicable
ADNR	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 < 3 %  
(1999/13/EC)**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:

R22 Harmful if swallowed.  
R36/37/38 Irritating to eyes, respiratory system and skin.  
R37/38 Irritating to respiratory system and skin.  
R40 Limited evidence of a carcinogenic effect.  
R41 Risk of serious damage to eyes.  
R42/43 May cause sensitization by inhalation and skin contact.  
R43 May cause sensitisation by skin contact.  
R50 Very toxic to aquatic organisms.  
R68 Possible risk of irreversible effects.  
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.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H335 May cause respiratory irritation.  
H341 Suspected of causing genetic defects.  
H351 Suspected of causing cancer.  
H400 Very toxic to aquatic life.

**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.

This safety data sheet was prepared in accordance with Council Directive 67/548/EEC and its subsequent amendments, and Commission Directive 1999/45/EC.

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**Annex - Exposure Scenarios:**

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