



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

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LOCTITE 270

SDS No. : 346906  
V006.1

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Replaces version from: 29.09.2016

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

#### 1.1. Product identifier

LOCTITE 270

#### Contains:

3,3,5 Trimethylcyclohexyl methacrylate  
2,2'-Ethylenedioxydiethyl dimethacrylate  
Maleic acid  
Acetic acid, 2-phenylhydrazide

#### 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 Ltd  
Wood Lane End  
HP2 4RQ Hemel Hempstead

Great Britain

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

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.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Specific target organ toxicity - single exposure	Category 3
H335 May cause respiratory irritation.	
Target organ: respiratory tract irritation	
Chronic hazards to the aquatic environment	Category 3
H412 Harmful to aquatic life with long lasting effects.	

## 2.2. Label elements

### Label elements (CLP):

**Hazard pictogram:**



**Signal word:**

Warning

**Hazard statement:**

H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H412 Harmful to aquatic life with long lasting effects.

**Precautionary statement:**

\*\*\*For consumer use only: P101 If medical advice is needed, have product container or label at hand. P102 Keep out of reach of children. P501 Dispose of waste and residues in accordance with local authority requirements\*\*\*

**Precautionary statement:  
Prevention**

P261 Avoid breathing vapours.  
P273 Avoid release to the environment.  
P280 Wear protective gloves.

**Precautionary statement:  
Response**

P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P337+P313 If eye irritation persists: Get medical advice/attention.

## 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:**

Anaerobic adhesive

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

<b>Hazardous components CAS-No.</b>	<b>EC Number REACH-Reg No.</b>	<b>content</b>	<b>Classification</b>
3,3,5 Trimethylcyclohexyl methacrylate 7779-31-9	231-927-0	25- 50 %	STOT SE 3 H335 Skin Irrit. 2 H315 Eye Irrit. 2 H319
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	203-652-6 01-2119969287-21	5- < 10 %	Skin Sens. 1B H317
Cumene hydroperoxide 80-15-9	201-254-7	1- < 2,5 %	Acute Tox. 4; Dermal H312 STOT RE 2 H373 Acute Tox. 4; Oral H302 Org. Perox. E H242 Acute Tox. 3; Inhalation H331 Aquatic Chronic 2 H411 Skin Corr. 1B H314
Maleic acid 110-16-7	203-742-5 01-2119488705-25	0,1- < 1 %	Acute Tox. 4; Oral H302 Acute Tox. 4; Dermal H312 Skin Irrit. 2 H315 Skin Sens. 1 H317 Eye Irrit. 2 H319 STOT SE 3 H335
Acetic acid, 2-phenylhydrazide 114-83-0	204-055-3	0,1- < 1 %	Acute Tox. 3; Oral H301 Skin Irrit. 2 H315 Skin Sens. 1 H317 Eye Irrit. 2 H319 STOT SE 3; Inhalation H335 Carc. 2 H351
1,4-Naphthalenedione 130-15-4	204-977-6	100- < 250 PPM	Acute Tox. 3; Oral H301 Skin Irrit. 2; Dermal H315 Skin Sens. 1; Dermal H317 Eye Irrit. 2 H319 Acute Tox. 1; Inhalation H330 STOT SE 3; Inhalation H335 Aquatic Acute 1 H400 Aquatic Chronic 1 H410 M factor (Acute Aquat Tox): 10 M factor (Chron 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. If symptoms persist, seek medical advice.

Skin contact:

Rinse with running water and soap.

Obtain medical attention if irritation persists.

Eye contact:

Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

Ingestion:

Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

### 4.2. Most important symptoms and effects, both acute and delayed

SKIN: Redness, inflammation.

SKIN: Rash, Urticaria.

EYE: Irritation, conjunctivitis.

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:**

Carbon dioxide, foam, powder

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 (CO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) 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

Avoid skin and eye contact.

Ensure adequate ventilation.

### 6.2. Environmental precautions

Do not let product enter drains.

**6.3. Methods and material for containment and cleaning up**

For small spills wipe up with paper towel and place in container for disposal.

For large spills absorb onto inert absorbent material and place in sealed container for disposal.

**6.4. Reference to other sections**

See advice in section 8

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

Use only in well-ventilated areas.

Prolonged or repeated skin contact should be avoided to minimise any risk of sensitisation.

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**

Ensure good ventilation/extraction.

Store in a cool, well-ventilated place.

**7.3. Specific end use(s)**

Adhesive

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Occupational Exposure Limits**

Valid for  
Great Britain

None

**Occupational Exposure Limits**

Valid for  
Ireland

None

**Predicted No-Effect Concentration (PNEC):**

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	aqua (freshwater)					0,164 mg/L	
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	aqua (marine water)					0,0164 mg/L	
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	sewage treatment plant (STP)					10 mg/L	
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	aqua (intermittent releases)					0,164 mg/L	
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	sediment (freshwater)					1,85 mg/kg	
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	sediment (marine water)					0,185 mg/kg	
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	soil					0,274 mg/kg	
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	aqua (freshwater)					0,0031 mg/L	
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	aqua (marine water)					0,00031 mg/L	
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	aqua (intermittent releases)					0,031 mg/L	
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	Sewage treatment plant					0,35 mg/L	
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	sediment (freshwater)					0,023 mg/kg	
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	sediment (marine water)					0,0023 mg/kg	
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	soil					0,0029 mg/kg	
Maleic acid 110-16-7	aqua (freshwater)					0,1 mg/L	
Maleic acid 110-16-7	aqua (intermittent releases)					0,4281 mg/L	
Maleic acid 110-16-7	sediment (freshwater)					0,334 mg/kg	
Maleic acid 110-16-7	sewage treatment plant (STP)					44,6 mg/L	
Maleic acid 110-16-7	aqua (marine water)					0,01 mg/L	
Maleic acid 110-16-7	sediment (marine water)					0,0334 mg/kg	
Maleic acid 110-16-7	soil					0,0415 mg/kg	

**Derived No-Effect Level (DNEL):**

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	Workers	inhalation	Long term exposure - systemic effects		48,5 mg/m <sup>3</sup>	
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	Workers	dermal	Long term exposure - systemic effects		13,9 mg/kg bw/day	
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	General population	inhalation	Long term exposure - systemic effects		14,5 mg/m <sup>3</sup>	
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	General population	dermal	Long term exposure - systemic effects		8,33 mg/kg bw/day	
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	General population	oral	Long term exposure - systemic effects		8,33 mg/kg bw/day	
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	Workers	inhalation	Long term exposure - systemic effects		6 mg/m <sup>3</sup>	
Maleic acid 110-16-7	Workers	dermal	Acute/short term exposure - local effects		0,55 mg/cm <sup>2</sup>	
Maleic acid 110-16-7	Workers	dermal	Long term exposure - local effects		0,04 mg/cm <sup>2</sup>	
Maleic acid 110-16-7	Workers	dermal	Acute/short term exposure - systemic effects		58 mg/kg bw/day	
Maleic acid 110-16-7	Workers	dermal	Long term exposure - systemic effects		3,3 mg/kg bw/day	
Maleic acid 110-16-7	Workers	inhalation	Acute/short term exposure - local effects		3 mg/m <sup>3</sup>	
Maleic acid 110-16-7	Workers	inhalation	Long term exposure - systemic effects		3 mg/m <sup>3</sup>	
Maleic acid 110-16-7	Workers	inhalation	Long term exposure - local effects		3 mg/m <sup>3</sup>	
Maleic acid 110-16-7	Workers	inhalation	Acute/short term exposure - systemic effects		3 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 (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;  $\geq 0.4$  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.

**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.

**Skin protection:**

Wear suitable protective clothing.

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

**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	liquid liquid green
Odor	characteristic
Odour threshold	No data available / Not applicable
pH	No data available / Not applicable
Initial boiling point	> 65 °C (> 149 °F)
Flash point	110 °C (230 °F)
Decomposition temperature	No data available / Not applicable
Vapour pressure (25 °C (77 °F))	2,85 mbar
Density ( $\rho$ )	1,10 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) (23 °C (73.4 °F); Solvent: Water)	Insoluble
Solubility (qualitative) (Solvent: Acetone)	Soluble
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

Peroxides.

### 10.2. Chemical stability

Stable under recommended storage conditions.

### 10.3. Possibility of hazardous reactions

See section reactivity

### 10.4. Conditions to avoid

No decomposition if used according to specifications.

### 10.5. Incompatible materials

See section reactivity.

### 10.6. Hazardous decomposition products

carbon oxides.

## 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 (EC) No 1272/2008. 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:

May cause irritation to the digestive tract.

#### Inhalative toxicity:

Due to the low volatility of the product there are no hazards associated with inhalation under normal conditions of use

#### Skin irritation:

Causes skin irritation.

#### Eye irritation:

Causes serious eye irritation.

#### Sensitizing:

May cause an allergic skin reaction.

#### Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	LD50	10.837 mg/kg	oral		rat	not specified
Cumene hydroperoxide 80-15-9	LD50	550 mg/kg	oral		rat	not specified
Maleic acid 110-16-7	LD50	708 mg/kg	oral		rat	not specified
1,4-Naphthalenedione 130-15-4	LD50	190 mg/kg	oral		rat	not specified

**Acute inhalative toxicity:**

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
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**Acute dermal toxicity:**

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Cumene hydroperoxide 80-15-9	LD50	1.200 - 1.520 mg/kg	dermal			not specified
Maleic acid 110-16-7	LD50	1.560 mg/kg	dermal		rabbit	not specified

**Skin corrosion/irritation:**

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Cumene hydroperoxide 80-15-9	corrosive		rabbit	Draize Test
Maleic acid 110-16-7	irritating	24 h	human	Patch Test

**Serious eye damage/irritation:**

Hazardous components CAS-No.	Result	Exposure time	Species	Method
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	slightly irritating	24 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Maleic acid 110-16-7	highly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

**Respiratory or skin sensitization:**

Hazardous components CAS-No.	Result	Test type	Species	Method
Maleic acid 110-16-7	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Maleic acid 110-16-7	sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)

**Germ cell mutagenicity:**

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Cumene hydroperoxide 80-15-9	positive	bacterial reverse mutation assay (e.g Ames test)	without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Cumene hydroperoxide 80-15-9	negative	dermal		mouse	not specified
Maleic acid 110-16-7	negative	bacterial reverse mutation assay (e.g Ames test)	no data		Ames Test
	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)

**Carcinogenicity:**

Hazardous components CAS-No.	Result	Species	Sex	Exposure time Frequency of treatment	Route of application	Method
Maleic acid 110-16-7	not carcinogenic	rat	male/female	2 y daily	oral: feed	OECD Guideline 451 (Carcinogenicity Studies)

**Reproductive toxicity:**

Hazardous substances CAS-No.	Result / Classification	Species	Exposure time	Species	Method
Maleic acid 110-16-7	NOAEL F1 = 150 mg/kg NOAEL F2 = 55 mg/kg	Two generation study oral: gavage	min. 80 d	rat	OECD Guideline 416 (Two- Generation Reproduction Toxicity Study)

**Repeated dose toxicity**

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Cumene hydroperoxide 80-15-9		inhalation: aerosol	6 h/d5 d/w	rat	not specified
Maleic acid 110-16-7	NOAEL=>= 40 mg/kg	oral: feed	90 ddaily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

**SECTION 12: Ecological information****General ecological 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 (EC) No 1272/2008. 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.

Harmful to aquatic life with long lasting effects.

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	LC50	16,4 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Cumene hydroperoxide 80-15-9	LC50	3,9 mg/l	Fish	96 h		OECD Guideline 203 (Fish, Acute Toxicity Test)
Cumene hydroperoxide 80-15-9	EC50	18 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Cumene hydroperoxide 80-15-9	ErC50	3,1 mg/l	Algae	72 h	Pseudokirchnerella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Cumene hydroperoxide 80-15-9	EC10	70 mg/l	Bacteria	30 min		not specified
Maleic acid 110-16-7	LC50	> 245 mg/l	Fish	48 h	Leuciscus idus	DIN 38412-15
Maleic acid 110-16-7	EC50	42,81 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Maleic acid 110-16-7	EC50	74,35 mg/l	Algae	72 h	Pseudokirchnerella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
1,4-Naphthalenedione 130-15-4	EC50	0,011 mg/l	Algae	72 h	Dunaliella bioculata	OECD Guideline 201 (Alga, Growth Inhibition Test)

**12.2. Persistence and degradability****Persistence and Biodegradability:**

No data available.

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	readily biodegradable		85 %	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
Cumene hydroperoxide 80-15-9		no data	0 %	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
Maleic acid 110-16-7	readily biodegradable	aerobic	97,08 %	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
1,4-Naphthalenedione 130-15-4		no data	0 - 60 %	OECD 301 A - F

**12.3. Bioaccumulative potential / 12.4. Mobility in soil****Mobility:**

Cured adhesives are immobile.

**Bioaccumulative potential:**

No data available.

Hazardous components CAS-No.	LogPow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	1,88					not specified
Cumene hydroperoxide 80-15-9		9,1		calculation		OECD Guideline 305 (Bioconcentration: Flow- through Fish Test) not specified
Cumene hydroperoxide 80-15-9	2,16					
Maleic acid 110-16-7	-1,3				20 °C	OECD Guideline 107 (Partition Coefficient (n- octanol / water), Shake Flask Method)
Acetic acid, 2- phenylhydrazide 114-83-0	0,74					not specified
1,4-Naphthalenedione 130-15-4	1,71					not specified

**12.5. Results of PBT and vPvB assessment**

Hazardous components CAS-No.	PBT/vPvB
2,2'-Ethylenedioxydiethyl dimethacrylate 109-16-0	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Cumene hydroperoxide 80-15-9	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Maleic acid 110-16-7	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

**12.6. Other adverse effects**

No data available.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods**

**Product disposal:**

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**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.2. UN proper shipping name**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.3. Transport hazard class(es)**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.4. Packing group**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.5. Environmental hazards**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.6. Special precautions for user**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**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 < 3 %  
(2010/75/EC)

**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:

- H242 Heating may cause a fire.
- H301 Toxic if swallowed.
- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H331 Toxic if inhaled.
- H335 May cause respiratory irritation.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H411 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.
- R43 May cause sensitisation by skin contact.

### 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.
- S37 Wear suitable gloves.

### Additional labeling:

For consumer use only: S2 Keep out of the reach of children.  
S46 If swallowed, seek medical advice immediately and show this container or label.

### Contains:

- Maleic acid,
- 2,2'-Ethylenedioxydiethyl dimethacrylate

**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.**

# LOCTITE<sup>®</sup> 270™

 (TDS for new formulation of Loctite<sup>®</sup> 270™) December 2013

## PRODUCT DESCRIPTION

LOCTITE<sup>®</sup> 270™ provides the following product characteristics:

<b>Technology</b>	Acrylic
Chemical Type	Dimethacrylate ester
Appearance (uncured)	Green liquid <sup>LMS</sup>
Fluorescence	Positive under UV light <sup>LMS</sup>
Components	One component - requires no mixing
Viscosity	Low
<b>Cure</b>	Anaerobic
Secondary Cure	Activator
<b>Application</b>	Threadlocking
Strength	High

LOCTITE<sup>®</sup> 270™ is designed for the permanent locking and sealing of threaded fasteners. The product cures when confined in the absence of air between close fitting metal surfaces and prevents loosening and leakage from shock and vibration. LOCTITE<sup>®</sup> 270™ is particularly suited for heavy duty applications such as studs into motor housings, nuts onto studs in pump housings and other fasteners where high strength is required. LOCTITE<sup>®</sup> 270™ provides robust curing performance. It not only works on active metals (e.g. brass, copper) but also on passive substrates such as stainless steel and plated surfaces. The product offers high temperature performance and oil tolerance. It tolerates minor surface contaminations from various oils, such as cutting, lubrication, anti-corrosion and protection fluids.

## NSF International

**Registered to NSF Category P1** for use as a sealant where there is no possibility of food contact in and around food processing areas. **Note:** This is a regional approval. Please contact your local Technical Service Center for more information and clarification.

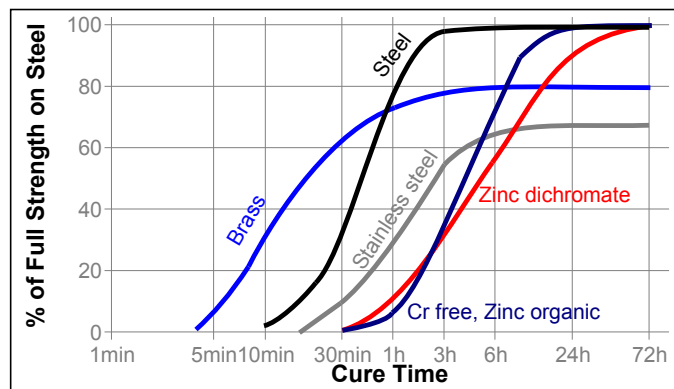
## TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.1
Flash Point - See SDS	
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):	
Spindle 2, speed 20 rpm,	400 to 600 <sup>LMS</sup>
Viscosity, Cone & Plate, 25 °C, mPa·s (cP):	
Cone C60/1°Ti @ shear rate 129 s <sup>-1</sup>	450

## TYPICAL CURING PERFORMANCE

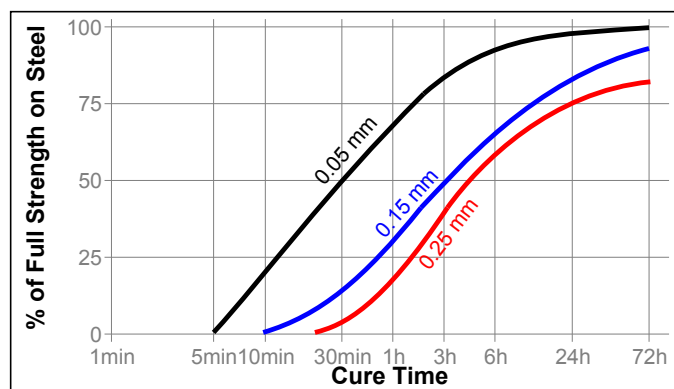
### Cure Speed vs. Substrate

The rate of cure will depend on the substrate used. The graph below shows the breakaway strength developed with time on M10 steel nuts and bolts. compared to different materials and tested according to ISO 10964.



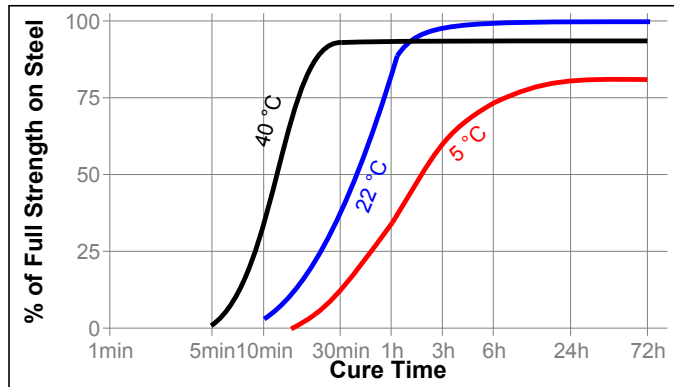
### Cure Speed vs. Bond Gap

The rate of cure will depend on the bondline gap. Gaps in threaded fasteners depends on thread type, quality and size. The following graph shows shear strength developed with time on steel pins and collars at different controlled gaps and tested according to ISO 10123.



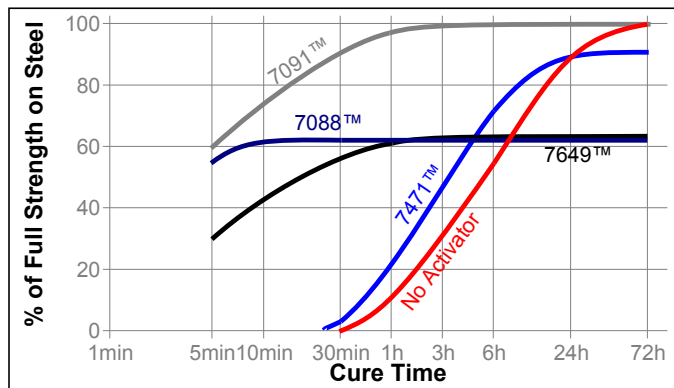
### Cure Speed vs. Temperature

The rate of cure will depend on the temperature. The graph below shows the breakaway strength developed with time at different temperatures on M10 steel nuts and bolts and tested according to ISO 10964.



### Cure Speed vs. Activator

Where cure speed is unacceptably long, or large gaps are present, applying activator to the surface will improve cure speed. The graph below shows the breakaway strength developed with time on M10 zinc dichromate steel nuts and bolts using Activator 7471™, 7649™, 7088™ and 7091™ and tested according to ISO 10964.



### TYPICAL PERFORMANCE OF CURED MATERIAL

#### Adhesive Properties

Cured for 24 hours @ 22 °C

Breakaway Torque, ISO 10964, Unseated:

M10 steel nuts and bolts	N·m	33
	(lb.in.)	(290)
M6 steel nuts and bolts	N·m	5
	(lb.in.)	(45)
M16 steel nuts and bolts	N·m	90
	(lb.in.)	(800)
3/8 x 16 steel nuts (grade 2) and bolts (grade 5)	N·m	31
	(lb.in.)	(275)

Prevail Torque @ 180°, ISO 10964, Unseated:

M10 steel nuts and bolts	N·m	33
	(lb.in.)	(290)
M6 steel nuts and bolts	N·m	3
	(lb.in.)	(26)
M16 steel nuts and bolts	N·m	125
	(lb.in.)	(1,100)
3/8 x 16 steel nuts (grade 2) and bolts (grade 5)	N·m	33
	(lb.in.)	(290)

Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m:

M10 steel nuts and bolts	N·m	39
	(lb.in.)	(345)
3/8 x 16 steel nuts (grade 2) and bolts (grade 5)	N·m	35
	(lb.in.)	(310)

Prevail Torque @ 180°, ISO 10964, Pre-torqued to 5 N·m:

M10 steel nuts and bolts	N·m	25
	(lb.in.)	(220)
3/8 x 16 steel nuts (grade 2) and bolts (grade 5)	N·m	31
	(lb.in.)	(275)

Compressive Shear Strength, ISO 10123:

Steel pins and collars	N/mm <sup>2</sup>	≥9.0 <sup>LM5</sup>
	(psi)	(≥1,305)

Cured for 1 week @ 22°C,

Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m:

M10 zinc phosphate nuts and bolts	N·m	46
	(lb.in.)	(400)
M10 stainless steel nuts and bolts	N·m	30
	(lb.in.)	(265)

### TYPICAL ENVIRONMENTAL RESISTANCE

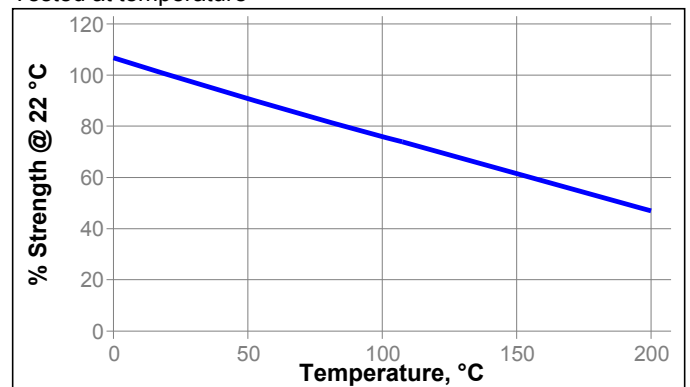
Cured for 1 week @ 22 °C

Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m:

M10 zinc phosphate steel nuts and bolts

### Hot Strength

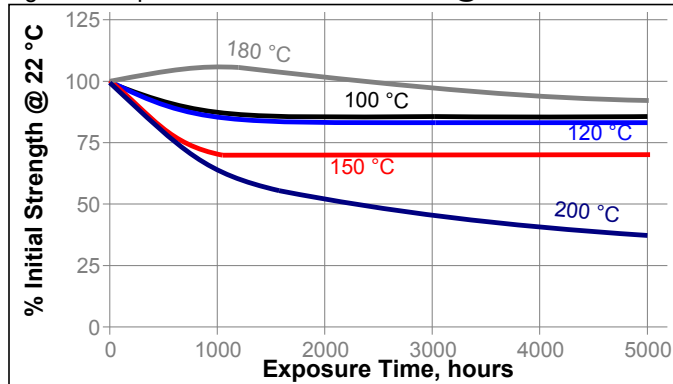
Tested at temperature



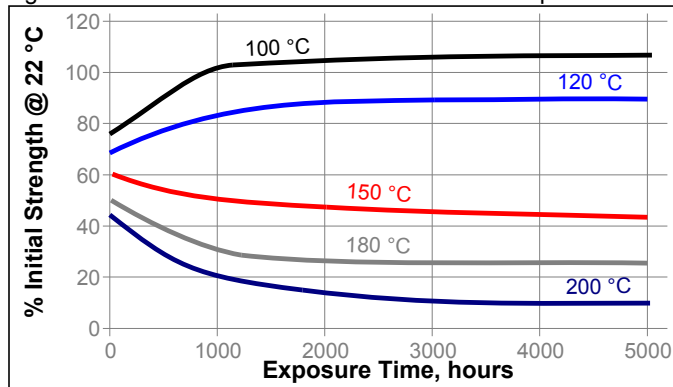


**Heat Aging**

Aged at temperature indicated and tested @ 22 °C

**Heat Aging/Hot Strength**

Aged under conditions indicated and tested at temperature

**Chemical/Solvent Resistance**

Aged under conditions indicated and tested @ 22 °C.

Environment	°C	% of initial strength		
		500 h	1000 h	5000 h
Motor oil	125	65	75	75
Unleaded gasoline	22	90	95	95
Brake fluid	22	105	105	100
Water/glycol 50/50	87	75	85	90
Acetone	22	95	95	100
Ethanol	22	95	95	95
E85 Ethanol fuel	22	95	95	95
B100 Bio-Diesel	22	100	100	110

Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m:  
M10 Stainless steel nuts and bolts

Environment	°C	% of initial strength		
		500 h	1000 h	5000 h
Sodium Hydroxide, 20%	22	75	65	55
Phosphoric Acid, 10%	22	100	95	65

**GENERAL INFORMATION**

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Safety Data Sheet (SDS).

Where aqueous washing systems are used to clean the surfaces before bonding, it is important to check for compatibility of the washing solution with the adhesive. In some cases these aqueous washes can affect the cure and performance of the adhesive.

This product is not normally recommended for use on plastics (particularly thermoplastic materials where stress cracking of the plastic could result). Users are recommended to confirm compatibility of the product with such substrates.

**Directions for use:****For Assembly**

1. For best results, clean all surfaces (external and internal) with a LOCTITE® cleaning solvent and allow to dry.
2. If the cure speed is too slow, use appropriate activator. Please see the Cure Speed vs. Activator graph for reference. Allow the activator to dry when needed.
3. To prevent the product from clogging in the nozzle, do not allow the tip to touch metal surfaces during application.
4. **For Thru Holes**, apply several drops of the product onto the bolt at the nut engagement area.
5. **For Blind Holes**, apply several drops of the product to the lower third of the internal threads in the blind hole, or the bottom of the blind hole.
6. **For Sealing Applications**, apply a 360° bead of product to the leading threads of the male fitting, leaving the first thread free. For bigger threads and voids, adjust product amount accordingly and apply a 360° bead of product on the female threads also.
7. Assemble and tighten as required.

**For Disassembly**

1. Remove with standard hand tools.
2. In rare instances where hand tools do not work because of excessive engagement length, apply localized heat to nut or bolt to approximately 250 °C. Disassemble while hot.
3. Apply localized heat to the assembly to approximately 250 °C. Disassemble while hot.

**For Cleanup**

1. Cured product can be removed with a combination of soaking in a Loctite solvent and mechanical abrasion such as a wire brush.

**Loctite Material Specification<sup>LMS</sup>**

LMS dated June 26, 2009. Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Quality.

**Storage**

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

**Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties**

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

**Conversions**

(°C x 1.8) + 32 = °F  
 kV/mm x 25.4 = V/mil  
 mm / 25.4 = inches  
 µm / 25.4 = mil  
 N x 0.225 = lb  
 N/mm x 5.71 = lb/in  
 N/mm<sup>2</sup> x 145 = psi  
 MPa x 145 = psi  
 N·m x 8.851 = lb·in  
 N·m x 0.738 = lb·ft  
 N·mm x 0.142 = oz·in  
 mPa·s = cP

**Note:**

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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## Reference 0.2