Safety Data Sheet

LOCTITE 660

SDS No. : 164196
V001.5
Date of issue: 20.10.2016

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

Product name: LOCTITE 660

Intended use: Anaerobic Adhesive

Supplier:
Henkel Australia Pty Ltd
135-141 Canterbury Road
Kilsyth, Victoria, 3137
Australia

Phone: +61 (3) 9724 6444

Emergency information: 24 HOUR EMERGENCY CONTACT NUMBER: 1800 032 379

Section 2. Hazards identification

Classification of the substance or mixture
Hazardous according to the criteria of Safe Work Australia.

GHS Classification:

Hazard Class	Hazard Category	Target organ
Skin irritation	Category 2	
Serious eye damage	Category 1	
Skin sensitizer	Category 1	
Target Organ Systemic Toxicant - Single exposure	Category 3	respiratory tract irritation
Respiratory sensitizer	Category 1	

Hazard pictogram:

Signal word: Danger

Hazard statement(s):	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation.
Precautionary Statement(s):	
Prevention:	P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P264 Wash hands thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear eye protection/face protection. P280 Wear protective gloves.
Response:	P302+P352 IF ON SKIN: Wash with plenty of water. P304+P340+P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P337+P313 If eye irritation persists: Get medical advice/attention. P362 Take off contaminated clothing.
Storage:	P403+P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.
Disposal:	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations.

Classification of material Xi - Irritant

Risk phrases:
R36/37/38 Irritating to eyes, respiratory system and skin.
R43 May cause sensitisation by skin contact.
R42 May cause sensitization by inhalation.

Safety phrases:
S24 Avoid contact with skin.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 After contact with skin, wash immediately with plenty of water and soap.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S23 Do not breathe vapour/spray.

Dangerous Goods information:
Not classified as Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).

Signal word:
HAZARDOUS

Section 3. Composition / information on ingredients

General chemical description:	Mixture
Type of preparation:	Anaerobic Sealant

Identity of ingredients:

Chemical ingredients	CAS-No.	Proportion
Methacrylic acid, monoester with propane-1,2-diol	27813-02-1	30- < 60 %
Cumene hydroperoxide	80-15-9	< 3 %
Maleic acid	110-16-7	< 1 %
Methacrylic acid	79-41-4	< 1 %
Cumene	98-82-8	< 0.5 %
non hazardous ingredients~		30- < 80 %

Section 4. First aid measures

Ingestion: Rinse out mouth, drink 1-2 glasses of water, do not induce vomiting.
Seek medical advice.

Skin: Rinse with running water and soap.
Seek medical advice.

Eyes: Rinse immediately with plenty of running water (for 10 minutes). Seek medical attention if necessary.

Inhalation: Move to fresh air. If symptoms persist, seek medical advice.

Section 5. Fire fighting measures

Suitable extinguishing media: Foam, dry chemical or carbon dioxide.

Decomposition products in case of fire:: Oxides of carbon.
Oxides of sulfur.
Oxides of nitrogen.
Irritating organic vapours.

Particular danger in case of fire:: None

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Section 6. Accidental release measures

Personal precautions: Avoid skin and eye contact.
See advice in section 8

Environmental precautions: Do not let product enter drains.

Clean-up methods: 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.

Section 7. Handling and storage

Precautions for safe handling: Use only in well-ventilated areas.
Avoid skin and eye contact.
Prolonged or repeated skin contact should be avoided to minimise any risk of sensitisation.

Conditions for safe storage: Store in original containers at 8-21°C (46.4-69.8°F) and do not return residual materials to containers as contamination may reduce the shelf life of the bulk product.

Section 8. Exposure controls / personal protection

National exposure standards:

Ingredient [Regulated substance]	form of exposure	TWA (ppm)	TWA (mg/m3)	Peak Limit. (ppm)	Peak Limit. (mg/m3)	STEL (ppm)	STEL (mg/m3)
METHACRYLIC ACID 79-41-4		20	70	-	-	-	-
CUMENE 98-82-8		25	125	-	-	-	-
CUMENE 98-82-8		-	-	-	-	75	375

Engineering controls: Local exhaust ventilation is recommended when general ventilation is not sufficient to control airborne contamination below occupational exposure limits.

Eye protection: Wear protective glasses.

Skin protection: Wear suitable protective clothing.
Avoid skin-contact.

Nitrile rubber gloves should be worn.

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.

Respiratory protection: Use only in well-ventilated areas.
If inhalation risk exists, wear a respirator or air supplied mask complying with the requirements of AS/NZS 1715 and AS/NZS 1716.

Section 9. Physical and chemical properties

Appearance: grey
paste
Odor: characteristic
Specific gravity: 1.1
Boiling point: > 149 °C (> 300.2 °F)
Flash point: > 93 °C (> 199.4 °F)
(Tagliabue closed cup)
Density: 1.098 g/cm3
Solubility in water: Negligible

Section 10. Stability and reactivity

Stability: Stable under recommended storage conditions.

Incompatible materials: Reacts with strong oxidants.

Hazardous decomposition products: May produce fumes when heated to decomposition. Fumes may contain carbon monoxide and other toxic fumes.

Section 11. Toxicological information

Health Effects:
Ingestion: May be harmful if swallowed.
Skin: Causes skin irritation.
May cause allergic skin reaction.
Eyes: Causes serious eye damage.
Inhalation: May cause respiratory tract irritation.
R42 May cause sensitization by inhalation.

Acute toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	LD50 LD50	> 2,000 mg/kg > 5,000 mg/kg	oral dermal		rat rabbit	OECD Guideline 401 (Acute Oral Toxicity) not specified
Cumene hydroperoxide 80-15-9	LD50 LD50	550 mg/kg 1,200 - 1,520 mg/kg	oral dermal		rat	not specified not specified
Maleic acid 110-16-7	LD50 LD50	708 mg/kg 1,560 mg/kg	oral dermal		rat rabbit	not specified not specified
Methacrylic acid 79-41-4	LD50 LC50 Acute toxicity estimate (ATE) LD50	1,320 mg/kg > 3.6 mg/l 500 mg/kg 500 - 1,000 mg/kg	oral inhalation dermal dermal	 4 h	rat rat rabbit	OECD Guideline 401 (Acute Oral Toxicity) OECD Guideline 403 (Acute Inhalation Toxicity) Expert judgement Dermal Toxicity Screening
Cumene 98-82-8	LD50 LC50 LD50	2,700 mg/kg 39 mg/l > 10,000 mg/kg	oral inhalation dermal	 4 h	rat rat rabbit	OECD Guideline 401 (Acute Oral Toxicity) not specified not specified

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	not irritating	24 h	rabbit	Draize Test
Cumene hydroperoxide 80-15-9	corrosive		rabbit	Draize Test
Maleic acid 110-16-7	irritating	24 h	human	Patch Test
Methacrylic acid 79-41-4	Category 1A (corrosive)	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Cumene 98-82-8	not irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Maleic acid 110-16-7	highly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Methacrylic acid 79-41-4	Category I		rabbit	Draize Test
Cumene 98-82-8	not 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)
Methacrylic acid 79-41-4	not sensitising	Buehler test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
Cumene 98-82-8	not 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
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	negative negative	bacterial reverse mutation assay (e.g Ames test) mammalian cell gene mutation assay	with and without with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay) OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	negative	oral: gavage		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
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 negative	bacterial reverse mutation assay (e.g Ames test) mammalian cell gene mutation assay	no data with and without		Ames Test OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Methacrylic acid 79-41-4	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Methacrylic acid 79-41-4	negative	inhalation		mouse	OECD Guideline 478 (Genetic Toxicology: Rodent Dominant Lethal Test)
Cumene 98-82-8	negative negative negative negative	bacterial reverse mutation assay (e.g Ames test) in vitro mammalian chromosome aberration test mammalian cell gene mutation assay DNA damage and repair assay, unscheduled DNA synthesis in mammalian cells in vitro	with and without with and without with and without without		OECD Guideline 471 (Bacterial Reverse Mutation Assay) OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) OECD Guideline 482 (Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells In Vitro)
Cumene 98-82-8	negative	inhalation: gas		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

Repeated dose toxicity:

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	NOAEL=300 mg/kg	oral: gavage		rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
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)
Cumene 98-82-8	NOAEL=> 535.8 mg/kg	oral: feed	28 ddaily	rat	not specified
Cumene 98-82-8	NOAEL=125 ppm	inhalation: vapour	14 w6 h/d, 5 d/w	rat	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)

Section 12. Ecological information

General ecological information: Do not empty into drains / surface water / ground water., May cause long-term adverse effects in the aquatic environment.

Toxicity:

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	LC50	493 mg/l	Fish	48 h	Leuciscus idus melanotus	DIN 38412-15
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	EC50	> 143 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	EC50	> 97.2 mg/l	Algae	72 h	Pseudokirchnerella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	NOEC	> 97.2 mg/l	Algae	72 h	Pseudokirchnerella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	EC10	1,140 mg/l	Bacteria	16 h		not specified
Cumene hydroperoxide 80-15-9	LC50	3.9 mg/l	Fish	96 h	Oncorhynchus mykiss	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)
Methacrylic acid 79-41-4	LC50	85 mg/l	Fish	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	EPA OTS 797.1400 (Fish Acute Toxicity Test)
Methacrylic acid 79-41-4	EC50	> 130 mg/l	Daphnia	48 h	Daphnia magna	EPA OTS 797.1300 (Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids)
Methacrylic acid 79-41-4	NOEC	8.2 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Methacrylic acid 79-41-4	EC50	45 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Methacrylic acid 79-41-4	EC10	100 mg/l	Bacteria	17 h		not specified
Cumene 98-82-8	LC50	4.8 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Cumene 98-82-8	EC50	4 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Cumene	EC50	2.6 mg/l	Algae	72 h	Selenastrum capricornutum	OECD Guideline

98-82-8 Cumene 98-82-8	EC10	211 mg/l	Bacteria	24 h	(new name: Pseudokirchnerella subcapitata)	201 (Alga, Growth Inhibition Test) DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)

Persistence and degradability:

Hazardous components **CAS-No.**	**Result**	**Route of application**	**Degradability**	**Method**
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	readily biodegradable	aerobic	94.2 %	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening 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)
Methacrylic acid 79-41-4	inherently biodegradable	aerobic	100 %	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
Methacrylic acid 79-41-4	readily biodegradable	aerobic	86 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Cumene 98-82-8		aerobic	86 %	ISO 10708 (BODIS-Test)

Bioaccumulative potential / Mobility in soil:

Hazardous components CAS-No.	LogPow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	0.97				20 °C	not specified
Cumene hydroperoxide 80-15-9		9.1		calculation		OECD Guideline 305 (Bioconcentration: Flow-through Fish Test)
Cumene hydroperoxide 80-15-9	2.16					not specified
Maleic acid 110-16-7	-1.3				20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Methacrylic acid 79-41-4	0.93				22 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Cumene 98-82-8		35.5		Carassius auratus		OECD Guideline 305 (Bioconcentration: Flow-through Fish Test)
Cumene 98-82-8	3.55				23 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

Section 13. Disposal considerations

Waste disposal of product: Dispose of according to Federal, State and local governmental regulations.

Section 14. Transport information

Road and Rail Transport:

Dangerous Goods information:	Not classified as Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).

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

Section 15. Regulatory information

SUSMP Poisons Schedule	None

Section 16. Other information

Abbreviations/acronyms:	ADGC - Australian Dangerous Goods Code IATA-DGR: International Air Transport Association – Dangerous Goods Regulations IMDG: International Maritime Dangerous Goods code STEL - Short term exposure limit TWA - Time weighted average
Reason for issue:	Reviewed SDS. Reissued with new date. involved chapters: 2,9,11,16
Date of previous issue:	22.04.2016

Disclaimer:

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