Safety Data Sheet

LOCTITE 435 RUBBER TOUGH. INST ADH known as
LOCTITE® 435™ INSTANT ADHESIVE

SDS No. : 332385
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Section 1. Identification of the substance/preparation and of the company/undertaking

Product name:
LOCTITE 435 RUBBER TOUGH. INST ADH known as LOCTITE® 435™ INSTANT ADHESIVE

Other means of identification:
LOCTITE 435 B020GENLOCTITE 435 B020GEN
Product code:
IDH840057
Recommended use of the chemical and restrictions on use

Intended use:
Adhesive

Identification of manufacturer, importer or distributor
Manufacturer: Henkel Puerto Rico, Inc., 9 V. Quilinchini Avenue, 00637 Sabana Grande, Puerto Rico. Phone: 001 787 873 6500 Fax: 001 787 873 2619

Importer: Henkel Thailand Ltd The Offices at Centralworld, 35th Floor, 999/9 Rama 1 Rd, Kwang Patumwan, Khet Patumwan, Bangkok 10330, Thailand. Phone : + 6622098000 Fax : +6622098008

E-mail address of person responsible for Safety Data Sheet:
ap-ua-psra.sea@henkel.com

Emergency information:
FOR EMERGENCIES ONLY (Spill, major leak, Fire, Exposure, or Accident). Call CHEMTREC: +1 703-741-5970

Section 2. Hazards identification

GHS Classification:

Hazard Class	Hazard Category	Target organ
Skin corrosion/irritation	Category 2	
Serious eye damage/eye irritation	Category 2	
Specific target organ toxicity - single exposure	Category 3	respiratory tract irritation

GHS label elements:

Hazard pictogram:

Signal word:
Warning

Hazard statement:
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precaution:

Prevention:
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

Storage:
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal:
P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Section 3. Composition / information on ingredients

Substance or Mixture:
Mixture

Declaration of hazardous chemical:

Hazard component CAS-No.	Content	GHS Classification
Ethyl 2-cyanoacrylate 7085-85-0	60- 100 %	Flammable liquids 4 H227 Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A H319 Specific target organ toxicity - single exposure 3 H335
phthalic anhydride 85-44-9	0.1- 1 %	Acute toxicity 4; Oral H302 Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 1 H318 Respiratory sensitization 1 H334 Skin sensitizer 1 H317 Specific target organ toxicity - single exposure 3 H335
Hydroquinone 123-31-9	< 0.1 %	Acute toxicity 4; Oral H302 Serious eye damage/eye irritation 1 H318 Skin sensitizer 1 H317 Germ cell mutagenicity 2 H341 Carcinogenicity 2 H351 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410

Section 4. 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).

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

Section 5. Fire fighting measures

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

Improper extinguishing media:
High pressure waterjet

Specific hazards arising from the chemical:
In the event of a fire, carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx) can be released.

Special protection equipment and precautions for firefighters:
Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA).

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

Section 6. Accidental release measures

Personal precautions:
Avoid skin and eye contact.
Wear protective equipment.
Ensure adequate ventilation.
See advice in section 8

Environmental precautions:
Do not empty into drains / surface water / ground water.

Clean-up methods:
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.
Dispose of contaminated material as waste according to Section 13.

Section 7. Handling and storage

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

Storage:
For optimum shelf life store in original containers under refrigerated conditions at 2 - 8°C (35.6 - 46.4 °F)

Section 8. Exposure controls / personal protection

Components with specific control parameters for workplace:

CYANOACRYLATES, ETHYL AND METHYL 7085-85-0	**Value type**	Short Term Exposure Limit (STEL):
	ppm	1
	Remarks	ACGIH
CYANOACRYLATES, ETHYL AND METHYL 7085-85-0	**Value type**	Time Weighted Average (TWA):
	ppm	0.2
	Remarks	ACGIH
PHTHALIC ANHYDRIDE 85-44-9	**Value type**	Time Weighted Average (TWA):
	ppm	2
	Remarks	TH OEL
PHTHALIC ANHYDRIDE, INHALABLE FRACTION AND VAPOR 85-44-9	**Value type**	Short Term Exposure Limit (STEL):
	mg/m³	0.005
	Remarks	ACGIH
PHTHALIC ANHYDRIDE, INHALABLE FRACTION AND VAPOR 85-44-9	**Value type**	Time Weighted Average (TWA):
	mg/m³	0.002
	Remarks	ACGIH
PHTHALIC ANHYDRIDE, INHALABLE FRACTION AND VAPOR 85-44-9	**Value type**	Skin designation:
	Remarks	ACGIH Danger of cutaneous absorption
HYDROQUINONE 123-31-9	**Value type**	Time Weighted Average (TWA):
	mg/m³	1
	Remarks	ACGIH
HYDROQUINONE 123-31-9	**Value type**	Time Weighted Average (TWA):
	mg/m³	2
	Remarks	TH OEL

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.
Protective eye equipment should conform to EN166.

Body protection:
Wear suitable protective clothing.
Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Engineering controls:
Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Hygienic measures:
Do not eat, drink or smoke while working.
Wash hands before work breaks and after finishing work.
Take off contaminated clothing and wash before reuse.

Section 9. Physical and chemical properties

Appearance:	colourless liquid
Odor:	irritating
Odor threshold (CA):	No data available.
pH:	No data available.
Melting point / freezing point:	No data available.
Specific gravity:	1.1
Boiling point:	> 149 °C (> 300.2 °F)
Flash point: (Tagliabue closed cup)	80 - 93 °C (176 - 199.4 °F)
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Lower explosive limit:	No data available.
Upper explosive limit:	No data available.
Vapor pressure:	< 0.3000000 mbar
Vapor density:	No data available.
Density:	1.1000 g/cm3
Solubility:	Polymerises in presence of water.
Partition coefficient: n-octanol/water:	No data available.
Auto ignition:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.
VOC content: (2010/75/EC)	< 3.00 %

Section 10. Stability and reactivity

Chemical stability:
Stable under recommended storage conditions.
Possibility of hazardous reactions:
Rapid exothermic polymerization will occur in the presence of water, amines, alkalis and alcohols.
Conditions to avoid:
None if used for intended purpose.
Hazardous decomposition products:
No decomposition if used according to specifications.

Section 11. Toxicological information

Inhalative toxicity:	Acute toxicity estimate (ATE) : > 20 mg/l Exposure time: 4 h Test atmosphere: Vapor. Method: Calculation method

Health Effects:

Skin: Bonds skin in seconds. May cause skin irritation. Cyanoacrylates have been reported to cause allergic reaction but due to rapid polymerization at the skin surface, an allergic response is rare.

Eyes: Irritating to eyes. Causes excessive tearing. Eyelids may bond.

Inhalation: Exposure to vapors above the established exposure limit results in respiratory irritation, which may lead to difficulty in breathing and tightness in the chest.

Symptoms of Overexposure**:** SKIN: Redness, inflammation.
EYE: Irritation, conjunctivitis.
RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

Acute oral toxicity:

Ethyl 2-cyanoacrylate 7085-85-0	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
phthalic anhydride 85-44-9	Value type	LD50
	Value	1,530 mg/kg
	Species	rat
	Method	not specified
Hydroquinone 123-31-9	Value type	LD50
	Value	367 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)

Acute inhalative toxicity:

phthalic anhydride 85-44-9	Value type	LC50
	Value	> 2.14 mg/l
	Exposure time	4 h
	Species	rat
	Method	OECD Guideline 403 (Acute Inhalation Toxicity)

Acute dermal toxicity:

Ethyl 2-cyanoacrylate 7085-85-0	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rabbit
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
phthalic anhydride 85-44-9	Value type	LD50
	Value	> 3,160 mg/kg
	Species	rabbit
	Method	not specified
Hydroquinone 123-31-9	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rabbit
	Method	OECD Guideline 402 (Acute Dermal Toxicity)

Skin corrosion/irritation:

Ethyl 2-cyanoacrylate 7085-85-0	Result	slightly irritating
	Exposure time	24 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
phthalic anhydride 85-44-9	Result	moderately irritating
	Exposure time	24 h
	Species	rabbit
	Method	not specified
Hydroquinone 123-31-9	Result	not irritating
	Exposure time	24 h
	Species	rabbit
	Method	Weight of evidence

Serious eye damage/irritation:

Ethyl 2-cyanoacrylate 7085-85-0	Result	irritating
	Exposure time	72 h
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
phthalic anhydride 85-44-9	Result	Category 1 (irreversible effects on the eye)
	Exposure time	
	Species	rabbit
	Method	not specified

Respiratory or skin sensitization:

Ethyl 2-cyanoacrylate 7085-85-0	Result	not sensitising
	Test type	
	Species	guinea pig
	Method	not specified
phthalic anhydride 85-44-9	Result	sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
phthalic anhydride 85-44-9	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Hydroquinone 123-31-9	Result	sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
Hydroquinone 123-31-9	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity:

Ethyl 2-cyanoacrylate 7085-85-0	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	
	Method	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Ethyl 2-cyanoacrylate 7085-85-0	Result	negative
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Ethyl 2-cyanoacrylate 7085-85-0	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
phthalic anhydride 85-44-9	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
phthalic anhydride 85-44-9	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	with and without
	Method	Chromosome Aberration Test
phthalic anhydride 85-44-9	Result	negative
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
phthalic anhydride 85-44-9	Result	negative
	Type of study / Route of administration	sister chromatid exchange assay in mammalian cells
	Metabolic activation / Exposure time	with and without
	Method	DNA damage and repair assay, UDS in mammalian cells
phthalic anhydride 85-44-9	Result	negative
	Type of study / Route of administration	intraperitoneal
	Metabolic activation / Exposure time	
	Species	mouse
	Method	equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Hydroquinone 123-31-9	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Hydroquinone 123-31-9	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Hydroquinone 123-31-9	Result	positive
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Hydroquinone 123-31-9	Result	positive
	Type of study / Route of administration	intraperitoneal
	Metabolic activation / Exposure time	
	Species	mouse
	Method	equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Hydroquinone 123-31-9	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	rat
	Method	equivalent or similar to OECD Guideline 478 (Genetic Toxicology: Rodent Dominant Lethal Test)
Hydroquinone 123-31-9	Result	positive
	Type of study / Route of administration	intraperitoneal
	Metabolic activation / Exposure time	

	Species	mouse
	Method	equivalent or similar to OECD Guideline 483 (Mammalian Spermatogonial Chromosome Aberration Test)

Repeated dose toxicity:

phthalic anhydride 85-44-9	Result	NOAEL=500 mg/kg
	Route of application	oral: feed
	Exposure time / Frequency of treatment	105 wdaily
	Species	rat
	Method	not specified
Hydroquinone 123-31-9	Result	NOAEL=50 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	13 w5 d/w
	Species	rat
	Method	not specified
Hydroquinone 123-31-9	Result	NOAEL=73.9 mg/kg
	Route of application	dermal
	Exposure time / Frequency of treatment	13 w6 h/d, 5 d/w
	Species	rat
	Method	equivalent or similar to OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)

Section 12. Ecological information

General ecological information: Do not empty into drains / surface water / ground water.

Toxicity:

phthalic anhydride 85-44-9	Value type	LC50
	Value	313 mg/l
	Acute Toxicity Study	Fish
	Exposure time	48 h
	Species	Leuciscus idus
	Method	DIN 38412-15
	Value type	NOEC
	Value	10 mg/l
	Acute Toxicity Study	Fish
	Exposure time	60 d
	Species	no data
	Method	OECD Guideline 210 (fish early lite stage toxicity test)
phthalic anhydride 85-44-9	Value type	EC50
	Value	> 640 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	other guideline:
phthalic anhydride 85-44-9	Value type	EC50
	Value	> 100 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	not specified
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	100 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	not specified
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
phthalic anhydride 85-44-9	Value type	EC50
	Value	> 1,000 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge
	Method	ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge)

Hydroquinone 123-31-9	Value type	LC50
	Value	0.638 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Hydroquinone 123-31-9	Value type	EC50
	Value	0.134 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Hydroquinone 123-31-9	Value type	EC50
	Value	0.335 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydroquinone 123-31-9	Value type	EC 50
	Value	0.038 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	30 min
	Species	
	Method	not specified

Persistence and degradability:

Ethyl 2-cyanoacrylate 7085-85-0	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	57 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
phthalic anhydride 85-44-9	Result	readily biodegradable
	Route of application	aerobic
	Degradability	85.2 %
	Method	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
Hydroquinone 123-31-9	Result	readily biodegradable
	Route of application	aerobic
	Degradability	75 - 81 %
	Method	EU Method C.4-E (Determination of the "Ready" BiodegradabilityClosed Bottle Test)

Bioaccumulative potential / Mobility in soil:

Ethyl 2-cyanoacrylate 7085-85-0	LogPow	0.776
	Temperature	22 °C
	Method	EU Method A.8 (Partition Coefficient)
phthalic anhydride 85-44-9	LogPow	1.6
	Temperature	
	Method	EU Method A.8 (Partition Coefficient)
Hydroquinone 123-31-9	LogPow	0.59
	Temperature	
	Method	EU Method A.8 (Partition Coefficient)

Section 13. Disposal considerations

Product

Method of 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

Packaging

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.
Packaging that cannot be cleaned are to be disposed of in the same manner as the product.

Section 14. Transport information

Road transport ADR:
Not dangerous goods

Railroad transport RID:
Not dangerous goods

Inland water transport ADN:
Not dangerous goods

Marine transport IMDG:
Not dangerous goods

Air transport IATA:

Class:	9
Packing group:	III
Packaging instructions (passenger):	964
Packaging instructions (cargo):	964
UN no.:	3334
Label:	9
Proper shipping name:	Aviation regulated liquid, n.o.s. (Cyanoacrylate ester)
Additional Information IATA:	Primary packs containing less than 500ml are unregulated by this mode of transport and may be shipped unrestricted.

`Section 15. Regulatory information

Regulatory Information:
Ministry of Industry Notice. The system to classify and communicate the hazard of hazardous material, BE. 2555

Global inventory status:

Regulatory list	Notification
TSCA	yes
DSL	yes
KECI (KR)	yes
IECSC	yes
AIIC	yes
TCSI	yes
PICCS (PH)	yes
EINECS	yes

Section 16. Other information

Disclaimer:
This Safety Data Sheet has been generated based on Ministry of Industry Notice. The system to classify and communicate the hazard of hazardous material, BE. 2555 only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.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.
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