Safety Data Sheet according to GB/T 16483-2008

LOCTITE 435

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

Product name: LOCTITE 435

Trade name: 435 CLEAR RUBBER TOUGHENED CA
Intended use: Cyanoacrylate

Manufacturer/Importer/Distributor Representative Company

Henkel Adhesive Technology (Shanghai) Co., Ltd.
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Revision date: 30.12.2020

Emergency information: Emergency telephone: +86 21 2891 8311 (24h).

2. Hazards identification

Classification of the substance or mixture according to GB 13690-2009 (General rule for classification and hazard communication of chemicals):

Hazard Class	Hazard Category	Target organ
Flammable liquids	Category 4	
Skin corrosion/irritation	Category 2	
Serious eye damage/eye irritation	Category 2A	
Specific target organ toxicity - single exposure	Category 3	respiratory tract irritation
Acute hazards to the aquatic environment	Category 3	

Label elements according to GB 15258-2009 (General rules for preparation of precautionary label for chemicals):

Hazard pictogram:

Signal word: Warning

Hazard statement:	H227 Combustible liquid. H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H402 Harmful to aquatic life.
Prevention:	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. 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. P273 Avoid release to the environment. P280 Wear protective gloves, eye protection, and 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. P370+P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Storage:	P403+P233 Store in a well-ventilated place. Keep container tightly closed. P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up.
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.

3. Composition / information on ingredients

General description: Mixture

Declaration of the ingredients according to GB 13690-2009:

Hazard component CAS-No.	Content	GHS Classification
Ethyl 2-cyanoacrylate 7085-85-0	90- <= 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 sensitizer 1 H334 Skin sensitizer 1 H317 Specific target organ toxicity - single exposure 3 H335
Methyl acrylate 96-33-3	0.1- < 0.25 %	Flammable liquids 2 H225 Acute toxicity 4; Oral H302 Acute toxicity 3; Inhalation H331 Acute toxicity 4; Dermal H312 Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A H319 Skin sensitizer 1 H317 Specific target organ toxicity - single exposure 3 H335 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 3 H412
Hydroquinone 123-31-9	0.025- < 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

Only hazardous ingredients for which a classification according to GB 13690-2009 is already available are displayed in this table. For full text of the Hazard statements see section 16 "Other information".

4. First aid measures

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.
Inhalation:	Move to fresh air, consult doctor if complaint persists.
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).

5. Fire fighting measures

Hazardous combustion products:	Oxides of carbon, oxides of nitrogen, irritating organic vapors.
Extinguishing media:	Foam, extinguishing powder, carbon dioxide. Fine water spray
Fire-fighting method:	In case of fire, keep containers cool with water spray.
Notice and measures for firing fighting:	Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA).

6. Accidental release measures

Emergency measures:	Ensure adequate ventilation. Do not let product enter drains.
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.

7. Handling and storage

Notice for 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
Notice for storage:	Refer to Technical Data Sheet

8. Exposure controls / personal protection

Hazardous components	GBZ 2.1-2019	ACGIH	NIOSH	OSHA
phthalic anhydride	1 mg/m3MAC	0.005 mg/m3 TWA Inhalable fraction and vapor. 0.002 mg/m3 TWA Inhalable fraction and vapor.		none
Methyl acrylate	(SKIN) 20 mg/m3PC-TWA	2 ppm TWA		none
Hydroquinone	1 mg/m3PC-TWA 2 mg/m3PC-STEL	1 mg/m3 TWA		none

Engineering controls: Use positive down-draft exhaust ventilation if general ventilation is insufficient to maintain vapor concentration below established exposure limits.

Respiratory protection: Ensure adequate ventilation.

Eye protection: Wear protective glasses.

Body protection: Use nitrile gloves and aprons as necessary to prevent contact. Do not use PVC, nylon or cotton.

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.

Other protection: The selection of PPE shall at least compliant with "Law of the People's Republic of China on Prevention and Control of Occupational Diseases" and "Code of practice for selection of personal protective equipments" (GB/T 11651-2008).

Pictograms for recommended PPE:

9. Physical and chemical properties

Physical state:	liquid	Appearance:	transparent
Evaporation rate:	Not available.	Odor:	irritating
pH:	Not applicable	Melting point:	Not available.
Boiling point:	> 149 °C (> 300.2 °F)	Density:	1.1000 g/cm3
Vapor density:	Not available.	Vapor pressure:	Not available.
Flash point:	80 - 93 °C (176 - 199.4 °F)	Ignition temperature:	Not available.
Lower explosive limit:	Not available.	Upper explosive limit:	Not available.
Solubility in water	Polymerises in presence of water.	Viscosity:	100.0 - 250.0 mPa.s
Auto-ignition temperature:	Not available.	Flammability:	Not available.
Octanol / water distribution coefficient:	Not available.	Decomposition temperature:	Not available.
VOC:	Bulk adhesive Others Assembly Industry <= 20 g/kg , GB 33372-2020 Limit of volatile organic compounds content in adhesive		

10. Stability and reactivity

Stability: Stable under recommended storage conditions.

Conditions to avoid: Stable under normal conditions of storage and use.

Decomposition products: carbon oxides.

Hazardous polymerization: Rapid exothermic polymerization will occur in the presence of water, amines, alkalis and alcohols.

11. Toxicological information

General toxicological information:
No laboratory animal data available.

Inhalative toxicity:
Acute toxicity estimate (ATE) : > 40 mg/l
Exposure time: 4 h
Test atmosphere: Vapor.
Method: Calculation method

Acute toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	LD50 LD50	> 5,000 mg/kg > 2,000 mg/kg	oral dermal		rat rabbit	OECD Guideline 401 (Acute Oral Toxicity) OECD Guideline 402 (Acute Dermal Toxicity)
phthalic anhydride 85-44-9	LD50 LC50 LD50	1,530 mg/kg > 2.14 mg/l > 10,000 mg/kg	oral inhalation dermal	4 h	rat rat rabbit	not specified OECD Guideline 403 (Acute Inhalation Toxicity) not specified
Methyl acrylate 96-33-3	LD50 LC50 LD50	768 mg/kg 6.5 mg/l 1,250 mg/kg	oral inhalation dermal	4 h	rat rat rabbit	OECD Guideline 401 (Acute Oral Toxicity) equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity) Draize Test
Hydroquinone 123-31-9	LD50 LD50	367 mg/kg > 2,000 mg/kg	oral dermal		rat rabbit	OECD Guideline 401 (Acute Oral Toxicity) OECD Guideline 402 (Acute Dermal Toxicity)

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)
Methyl acrylate 96-33-3	irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Hydroquinone 123-31-9	not irritating	24 h	rabbit	Weight of evidence

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	not specified

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	not sensitising		guinea pig	not specified
phthalic anhydride 85-44-9	sensitising	in vivo	guinea pig	not specified
phthalic anhydride 85-44-9	sensitising	Mouse local lymphnode assay (LLNA)	mouse	Mouse local lymphnode assay (LLNA)
Methyl acrylate 96-33-3	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Hydroquinone 123-31-9	sensitising	Guinea pig maximisation test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
Hydroquinone 123-31-9	sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	negative negative negative	bacterial reverse mutation assay (e.g Ames test) mammalian cell gene mutation assay in vitro mammalian chromosome aberration test	with and without with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay) OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
phthalic anhydride 85-44-9	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		not specified
Methyl acrylate 96-33-3	negative	inhalation: vapour		mouse	not specified
Hydroquinone 123-31-9	negative negative positive	bacterial reverse mutation assay (e.g Ames test) in vitro mammalian chromosome aberration test mammalian cell gene mutation assay	with and without with and without with and without		equivalent or similar to 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)
Hydroquinone 123-31-9	positive negative positive	intraperitoneal oral: gavage intraperitoneal		mouse rat mouse	equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) equivalent or similar to OECD Guideline 478 (Genetic Toxicology: Rodent Dominant Lethal Test) equivalent or similar to OECD Guideline 483 (Mammalian Spermatogonial Chromosome Aberration Test)

Repeated dose toxicity:

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Methyl acrylate 96-33-3	NOAEL=23 ppm	inhalation	13 weeks6 hrs/day, 5 days/wk	rat	BASF Test
Methyl acrylate 96-33-3	LOAEL=20 mg/kg	oral: drinking water	13 wcontinuous	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Methyl acrylate 96-33-3	NOAEL=5 mg/kg	oral: drinking water	13 wcontinuous	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Hydroquinone 123-31-9	NOAEL=50 mg/kg	oral: gavage	13 w5 d/w	rat	not specified
Hydroquinone 123-31-9	NOAEL=73.9 mg/kg	dermal	13 w6 h/d, 5 d/w	rat	equivalent or similar to OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)

12. Ecological information

General ecological information:

Do not empty into drains / surface water / ground water.

Toxicity:

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
phthalic anhydride 85-44-9	LC50	313 mg/l	Fish	48 h	Leuciscus idus	DIN 38412-15
phthalic anhydride 85-44-9	NOEC	10 mg/l	Fish	60 d	no data	OECD Guideline 210 (fish early lite stage toxicity test)
phthalic anhydride 85-44-9	EC50	> 640 mg/l	Daphnia	48 h	Daphnia magna	other guideline:
phthalic anhydride 85-44-9	EC50	> 100 mg/l	Algae	72 h	not specified	OECD Guideline 201 (Alga, Growth Inhibition Test)
phthalic anhydride 85-44-9	NOEC	100 mg/l	Algae	72 h	not specified	OECD Guideline 201 (Alga, Growth Inhibition Test)
phthalic anhydride 85-44-9	EC50	> 1,000 mg/l	Bacteria	3 h	not specified	ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge)
Methyl acrylate 96-33-3	LC50	3.4 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Methyl acrylate 96-33-3	EC50	2.6 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Methyl acrylate 96-33-3	EC50	3.55 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Methyl acrylate 96-33-3	EC10	> 100 mg/l	Bacteria	72 h		not specified
Hydroquinone 123-31-9	LC50	0.638 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Hydroquinone 123-31-9	EC50	0.134 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Hydroquinone 123-31-9	EC50	0.335 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydroquinone 123-31-9	EC 50	0.038 mg/l	Bacteria	30 min		not specified

Persistence and degradability:

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
Ethyl 2-cyanoacrylate 7085-85-0	not readily biodegradable.	aerobic	57 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
phthalic anhydride 85-44-9	readily biodegradable	aerobic	74 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Methyl acrylate 96-33-3	readily biodegradable	aerobic	90 - 100 %	OECD Guideline 310 (Ready BiodegradabilityCO2 in Sealed Vessels (Headspace Test)
Hydroquinone 123-31-9	readily biodegradable	aerobic	75 - 81 %	EU Method C.4-E (Determination of the "Ready" BiodegradabilityClosed Bottle Test)

Bioaccumulative potential / Mobility in soil:

Hazardous components CAS-No.	LogPow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method

Ethyl 2-cyanoacrylate 7085-85-0	0.776				22 °C	EU Method A.8 (Partition Coefficient)
phthalic anhydride 85-44-9	1.6					EU Method A.8 (Partition Coefficient)
Methyl acrylate 96-33-3		3.16				not specified
Methyl acrylate 96-33-3	0.739				25 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Hydroquinone 123-31-9	0.59					EU Method A.8 (Partition Coefficient)

13. Disposal considerations

Product disposal: 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.

14. Transport information

Road transport CN_DG:
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.

Notice For Transportation: Transport according to local and national regulations. Ensure containers will not leak, collapse, or being damaged when transported. DO NOT transport with incompatible materials. Transportation vehicle should be equipped with right fire-fighting equipment in case of emergency. Avoid solarization, drenched and high temperature when transported.

`15. Regulatory information

The following laws and regulations lay down provisions in terms of chemicals safety use, storage, transportation, loading/ unloading, classification as well as symbol.
“Law of the People's Republic of China on Work Safety” (Adopted by the 28th meeting of 9th NPC standing committee on 29th June 2002, revised by 10th meeting of 12nd NPC standing committee on 31st Aug 2014).
Law of the People's Republic of China on the Prevention and Treatment of Occupational Diseases” (Adopted by the 24th meeting of 9th NPC standing committee on 27th October 2001, revised by 7th meeting of 13rd NPC standing committee on 29th Dec 2018).
“Law of the People's Republic of China on environmental protection” (Adopted by 11st meeting of 7th NPC standing committee on 26th December 1989, revised by 8th meeting of 12nd NPC standing committee on 24th Apr 2014).
“Regulation on the Safety Management of Hazardous Chemicals” (Adopted by 32nd State Council executive meeting on 4th December 2013).
“Regulations on License to Work Safety” (Adopted by 54th State Council executive meeting on 29th July 2014).

China Inventory of Existing Chemicals:	All components are listed or are exempt from Inventory of Existing Chemical Substances in China.

16. Other information

Issue date:	20.04.2023
Issue department:	Product Safety & Regulatory Affairs for China
Disclaimer:	This Safety Data Sheet has been generated in accordance with Chinese law only. It provides information on the chemical product in the aspects of safety, health, environment, etc, recommending preventive and protective measures and countermeasures in case of emergency. The information contained herein does not constitute a guarantee concerning the properties of the material. 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.The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation and its affiliates ("Henkel") does not assume responsibility for any results obtained by persons over whose methods Henkel has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any Henkel's products. In light of the foregoing, Henkel specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel's products. Henkel further disclaims any liability for consequential or incidental damages of any kind, including lost profits.
Others:	**The full text of all abbreviations indicated by codes in this safety data sheet section 3 are as follows:** H225 Highly flammable liquid and vapor. H227 Combustible liquid. H302 Harmful if swallowed. H312 Harmful in contact with skin. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H331 Toxic if inhaled. 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. H401 Toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.