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

Product name:
LOCTITE DRI 513 BO1L

Other means of identification:
LOCTITE DRI 513 BO1L

Product code:
IDH2032724

Recommended use of the chemical and restrictions on use

Intended use:
Threadlocker

Identification of manufacturer, importer or distributor

Manufacturer: Henkel Corporation, Cleveland, 18731 Cranwood Parkway, Cleveland, OH 44128, United States.
Phone: 001 216 475 3600 Fax: 001 216

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 Telephone for Chemical Accidents:
FOR EMERGENCIES ONLY (Spill, major leak, Fire, Exposure, or Accident). Call: +662 209 8008

Section 2. Hazards identification

GHS Classification:

Substance or mixture is not classified as hazardous according to Globally Harmonized System(GHS).

GHS label elements:

Substance or mixture is not classified as hazardous according to Globally Harmonized System(GHS).

Section 3. Composition / information on ingredients

Substance or Mixture:
Mixture

Declaration of hazardous chemical:

Hazard component CAS-No.	Content	GHS Classification
Mica 12001-26-2	10- 30 %	
Titanium dioxide 13463-67-7	1- 10 %	
Hydrocarbon C11-25 dearomatized 64742-46-7	0.1- 1 %	Aspiration hazard 1 H304
Kaolin 1332-58-7	0.1- 1 %	
Quartz (SiO2) "respirable particulates (reaches the alveoli)" (RCS) >=1% - <10% 14808-60-7	0.1- 1 %	Specific target organ toxicity - repeated exposure 2 H373

Section 4. First aid measures

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

Skin contact:
Rinse with running water and soap.
If adverse health effects develop seek medical attention.

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

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

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

Section 5. Fire fighting measures

Suitable extinguishing media:
Carbon dioxide, foam, powder

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

Hazardous combustion products:
carbon oxides.

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.
Ensure adequate ventilation.
Wear protective equipment.
See advice in section 8

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

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.
Dispose of contaminated material as waste according to Section 13.

Section 7. Handling and storage

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.
See advice in section 8

Storage:
Store below 100°F (38°C).
Protect from freezing.
Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

Section 8. Exposure controls / personal protection

Components with specific control parameters for workplace:

MICA, RESPIRABLE DUST 12001-26-2	**Value type**	Time Weighted Average (TWA):
	mg/m³	3
	Remarks	TH OEL
Mica, respirable fraction 12001-26-2	**Value type**	Time Weighted Average (TWA):
	mg/m³	0.1
	Remarks	ACGIH
Titanium dioxide, nanoscale particles, respirable fraction 13463-67-7	**Value type**	Time Weighted Average (TWA):
	mg/m³	0.2
	Remarks	ACGIH
Titanium dioxide, finescale particles, respirable fraction 13463-67-7	**Value type**	Time Weighted Average (TWA):
	mg/m³	2.5
	Remarks	ACGIH
Mineral oil, excluding metal working fluids, pure, highly and severely refined, inhalable fraction 64742-46-7	**Value type**	Time Weighted Average (TWA):
	mg/m³	5
	Remarks	ACGIH
KAOLIN, RESPIRABLE FRACTION 1332-58-7	**Value type**	Time Weighted Average (TWA):
	mg/m³	2
	Remarks	ACGIH The value is for particulate matter containing no asbestos and <1% crystalline silica.
Silica, crystalline, α-quartz, respirable dust 14808-60-7	**Value type**	Time Weighted Average (TWA):
	mg/m³	0.025
	Remarks	TH OEL
Silica, crystalline-α-Quartz, respirable fraction 14808-60-7	**Value type**	Time Weighted Average (TWA):
	mg/m³	0.025
	Remarks	ACGIH

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:
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; >= 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; >= 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:
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.

General protection and hygiene measures:
The workplace should be equipped with an emergency shower and eye-rinsing facility.

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

Section 9. Physical and chemical properties

Appearance:	white liquid, viscous
Odor:	Acrylic
Odor threshold (CA):	No data available.
pH:(Concentration: 100 %)	7.8 - 8.0
Melting point / freezing point:	Not applicable, Product is a liquid
Specific gravity:	1.2 - 1.25
Boiling point:	100 °C (212 °F)
Flash point: (Tagliabue closed cup)	> 100.00 °C (> 212 °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: (no method / method unknown; 20 °C (68 °F))	20 mm hg Approximately23.4 hPa
Vapor density:	< 1
Density:	1.20 - 1.25 g/cm3
Solubility:	emulsifiable
Partition coefficient: n-octanol/water:	No data available.
Auto ignition:	No data available.
Decomposition temperature:	No data available.
Viscosity:	700 - 1,200 mPa.s (Brookfield; 25 °C (77 °F); speed of rotation: 20 min-1; Spindle No: 4; Method: ;; LCT STM 10; Viscosity Brookfield)
VOC content: (2010/75/EC)	< 10.00 %

Section 10. Stability and reactivity

Reactivity/Incompatible materials:
Strong oxidizing agents.
Chemical stability:
Stable under recommended storage conditions.

Conditions to avoid:
Stable under normal conditions of storage and use.
Hazardous decomposition products:
carbon oxides.

Section 11. Toxicological information

Symptoms of Overexposure**:** Prolonged or repeated contact may cause skin irritation.
Prolonged or repeated contact may cause eye irritation.

Acute oral toxicity:

Mica 12001-26-2	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	not specified
Titanium dioxide 13463-67-7	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure)
Hydrocarbon C11-25 dearomatized 64742-46-7	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
Kaolin 1332-58-7	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
Quartz (SiO2) "respirable particulates (reaches the alveoli)" (RCS) >=1% - <10% 14808-60-7	Value type	Acute toxicity estimate (ATE)
	Value	> 2,000 mg/kg
	Species	
	Method	Expert judgement

Acute inhalative toxicity:

Titanium dioxide 13463-67-7	Value type	LC50
	Value	> 6.82 mg/l
	Exposure time	4 h
	Species	rat
	Method	not specified
Hydrocarbon C11-25 dearomatized 64742-46-7	Value type	LC50
	Value	> 5.266 mg/l
	Exposure time	4 h
	Species	rat
	Method	not specified
Kaolin 1332-58-7	Value type	LC50
	Value	> 9 mg/l
	Exposure time	4 h
	Species	rat
	Method	not specified

Acute dermal toxicity:

Titanium dioxide 13463-67-7	Value type	LD50
	Value	> 10,000 mg/kg
	Species	rabbit
	Method	not specified
Hydrocarbon C11-25 dearomatized 64742-46-7	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rabbit
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
Kaolin 1332-58-7	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
Quartz (SiO2) "respirable particulates (reaches the alveoli)" (RCS) >=1% - <10% 14808-60-7	Value type	Acute toxicity estimate (ATE)
	Value	> 2,000 mg/kg
	Species	
	Method	Expert judgement

Skin corrosion/irritation:

Titanium dioxide 13463-67-7	Result	not irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Hydrocarbon C11-25 dearomatized 64742-46-7	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Titanium dioxide 13463-67-7	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Hydrocarbon C11-25 dearomatized 64742-46-7	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Titanium dioxide 13463-67-7	Result	not sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Titanium dioxide 13463-67-7	Result	not sensitising
	Test type	Buehler test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
Hydrocarbon C11-25 dearomatized 64742-46-7	Result	not sensitising
	Test type	in vivo
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

Titanium dioxide 13463-67-7	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)
Titanium dioxide 13463-67-7	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)
Titanium dioxide 13463-67-7	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)
Titanium dioxide 13463-67-7	Result	negative
	Type of study / Route of administration	in vitro mammalian cell micronucleus test
	Metabolic activation / Exposure time	without
	Method	equivalent or similar to OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
Titanium dioxide 13463-67-7	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	rat
	Method	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Hydrocarbon C11-25 dearomatized 64742-46-7	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)
Hydrocarbon C11-25 dearomatized 64742-46-7	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)
Hydrocarbon C11-25 dearomatized 64742-46-7	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)
Hydrocarbon C11-25 dearomatized 64742-46-7	Result	negative
	Type of study / Route of administration	oral: unspecified
	Metabolic activation / Exposure time	
	Species	mouse
	Method	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Hydrocarbon C11-25 dearomatized 64742-46-7	Result	negative
	Type of study / Route of administration	intraperitoneal
	Metabolic activation / Exposure time	
	Species	mouse
	Method	OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test)
Hydrocarbon C11-25 dearomatized 64742-46-7	Result	negative
	Type of study / Route of administration	inhalation
	Metabolic activation / Exposure time	
	Species	mouse
	Method	OECD Guideline 483 (Mammalian Spermatogonial Chromosome Aberration Test)

Repeated dose toxicity:

Titanium dioxide 13463-67-7	Result	NOAEL=> 1,000 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	92 ddaily
	Species	rat
	Method	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Hydrocarbon C11-25 dearomatized 64742-46-7	Result	NOAEL=5,000 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	
	Species	rat
	Method	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Hydrocarbon C11-25 dearomatized 64742-46-7	Result	NOAEL=10.4 mg/l
	Route of application	inhalation
	Exposure time / Frequency of treatment	
	Species	rat
	Method	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
Kaolin 1332-58-7	Result	NOAEL=5000 ppm
	Route of application	oral: feed
	Exposure time / Frequency of treatment	90 dayscontinuous
	Species	rat
	Method	Henkel Method
Kaolin 1332-58-7	Result	LOAEL=<= 10000 ppm
	Route of application	oral: feed
	Exposure time / Frequency of treatment	90 dayscontinuous
	Species	rat
	Method	Henkel Method

Section 12. Ecological information

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

Toxicity:

Mica 12001-26-2	Value type	LC50
	Value	400 mg/l
	Acute Toxicity Study	Fish
	Exposure time	48 h
	Species	Leuciscus idus
	Method	DIN 38412-15
Mica 12001-26-2	Value type	EC50
	Value	2,808 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	24 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Mica 12001-26-2	Value type	EC0
	Value	1,000 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	30 min
	Species	Pseudomonas putida
	Method	DIN 38412, part 27 (Bacterial oxygen consumption test)
Titanium dioxide 13463-67-7	Value type	LC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Fish
	Exposure time	48 h

	Species	Leuciscus idus
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Titanium dioxide 13463-67-7	Value type	EC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Titanium dioxide 13463-67-7	Value type	EC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Titanium dioxide 13463-67-7	Value type	EC0
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Bacteria
	Exposure time	24 h
	Species	Pseudomonas fluorescens
	Method	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)
Hydrocarbon C11-25 dearomatized 64742-46-7	Value type	LC50
	Value	> 10,000 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Pimephales promelas
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Hydrocarbon C11-25 dearomatized 64742-46-7	Value type	EL50
	Value	> 3,000 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Kaolin 1332-58-7	Value type	LC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Kaolin 1332-58-7	Value type	EC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Kaolin 1332-58-7	Value type	EC50
	Value	Toxicity > Water solubility
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Kaolin 1332-58-7	Value type	EC0
	Value	1,000 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	30 min
	Species	
	Method	not specified

Persistence and degradability:

Hydrocarbon C11-25 dearomatized 64742-46-7	Result	readily biodegradable
	Route of application	aerobic
	Degradability	74 %
	Method	OECD Guideline 306 (Biodegradability in Seawater)

Section 13. Disposal considerations

Product

Method of disposal:
Dispose of in accordance with local and national regulations.

Packaging

Disposal of uncleaned packages:
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:
Not dangerous goods

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
PICCS (PH)	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.
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