



Safety Data Sheet according to (EC) No 1907/2006 as amended

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LOCTITE TC 4

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V002.0

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

1.1. Product identifier

LOCTITE TC 4

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use:

1-c- epoxide adhesive

1.3. Details of the supplier of the safety data sheet

Henkel Ltd

Adhesives

Wood Lane End

HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 (1442) 278000

SDSinfo.Adhesive@henkel.com

For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or www.henkel-adhesives.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):

Acute hazards to the aquatic environment

Category 1

H400 Very toxic to aquatic life.

Chronic hazards to the aquatic environment

Category 1

H410 Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Signal word:

Warning

Hazard statement: H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement: P273 Avoid release to the environment.
Prevention

2.3. Other hazards

None if used properly.

Following substances are present in a concentration \geq the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in a concentration \geq the concentration limit for depiction in Section 3 that are assessed to be a PBT, vPvB or ED.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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

Hazardous components CAS-No. EC Number REACH-Reg No.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
zinc oxide 1314-13-2 215-222-5 01-2119463881-32	50- 100 %	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M acute = 1 M chronic = 1	

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:

Should not be a problem as product is of low volatility. However, if feeling unwell remove patient to fresh air.

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

Prolonged or repeated contact may cause skin irritation.

Prolonged or repeated contact may cause eye irritation.

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:

water, carbon dioxide, foam, powder

Extinguishing media which must not be used for safety reasons:

High pressure waterjet

5.2. Special hazards arising from the substance or mixture

In the event of a fire, carbon monoxide (CO) and carbon dioxide (CO₂) 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 contact with skin and eyes.

Wear protective equipment.

Ensure adequate ventilation.

6.2. Environmental precautions

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

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.

Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid skin and eye contact.

See advice in section 8

Hygiene measures:

Good industrial hygiene practices should be observed.

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke while working.

7.2. Conditions for safe storage, including any incompatibilities

Ensure good ventilation/extraction.

Keep container tightly sealed.

Refer to Technical Data Sheet

7.3. Specific end use(s)

1-c- epoxide 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

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Zinc oxide 1314-13-2 [ZINC OXIDE,]		2	Time Weighted Average (TWA):		IR_OEL
Zinc oxide 1314-13-2 [ZINC OXIDE,]		10	Short Term Exposure Limit (STEL):	15 minutes	IR_OEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
zinc oxide 1314-13-2	aqua (freshwater)		0,0206 mg/l				
zinc oxide 1314-13-2	aqua (marine water)		0,0061 mg/l				
zinc oxide 1314-13-2	sewage treatment plant (STP)		0,1 mg/l				
zinc oxide 1314-13-2	sediment (freshwater)				117,8 mg/kg		
zinc oxide 1314-13-2	sediment (marine water)				56,5 mg/kg		
zinc oxide 1314-13-2	Soil				35,6 mg/kg		
zinc oxide 1314-13-2	Air						no hazard identified
zinc oxide 1314-13-2	oral						no potential for bioaccumulation

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
zinc oxide 1314-13-2	Workers	Inhalation	Long term exposure - systemic effects		5 mg/m ³	no hazard identified
zinc oxide 1314-13-2	Workers	dermal	Long term exposure - systemic effects		83 mg/kg	no hazard identified
zinc oxide 1314-13-2	Workers	inhalation	Long term exposure - local effects		0,5 mg/m ³	no hazard identified
zinc oxide 1314-13-2	General population	Inhalation	Long term exposure - systemic effects		2,5 mg/m ³	no hazard identified
zinc oxide 1314-13-2	General population	dermal	Long term exposure - systemic effects		83 mg/kg	no hazard identified
zinc oxide 1314-13-2	General population	oral	Long term exposure - systemic effects		0,83 mg/kg	no hazard identified

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/extraction.

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

Physical state	solid
Delivery form	paste
Colour	White
Odor	None
Melting point	> 200 °C (> 392 °F)
Solidification temperature	Not applicable, Product is a solid.
Initial boiling point	> 300 °C (> 572 °F)
Flammability	The product is not flammable.
Explosive limits	Currently under determination
Flash point	> 150 °C (> 302 °F)
Auto-ignition temperature	Not applicable, Product is a solid.
Decomposition temperature	> 150 °C (> 302 °F);
pH	Not applicable, Product is non-soluble (in water).
Viscosity (kinematic)	Not applicable, Product is a solid.
Viscosity, dynamic	Not available.
()	
Solubility (qualitative)	Insoluble
(Solvent: Water)	
Partition coefficient: n-octanol/water	Currently under determination
Vapour pressure	< 0,1 hPa
(20 °C (68 °F))	
Density	2,2 g/cm ³ None
(20 °C (68 °F))	
Relative vapour density:	Not applicable
Particle characteristics	Not applicable, mixture is a paste.

9.2. Other information

Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity

None if used for intended purpose.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

No decomposition if stored and applied as directed.

10.5. Incompatible materials

None if used properly.

10.6. Hazardous decomposition products

No decomposition if used according to specifications.

SECTION 11: Toxicological information

General toxicological information:

Prolonged or repeated contact may cause skin irritation.

Prolonged or repeated contact may cause eye irritation.

1.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**Acute oral toxicity:**

May cause irritation to the digestive tract.

Hazardous substances CAS-No.	Value type	Value	Species	Method
zinc oxide 1314-13-2	LD50	> 5.000 mg/kg	rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)

Acute dermal toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
zinc oxide 1314-13-2	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)

Acute inhalative toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
zinc oxide 1314-13-2	LC50	> 5,7 mg/l	dust/mist	4 h	rat	equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
zinc oxide 1314-13-2	not irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
zinc oxide 1314-13-2	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Species	Method
zinc oxide 1314-13-2	not sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
zinc oxide 1314-13-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
zinc oxide 1314-13-2	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
zinc oxide 1314-13-2	ambiguous	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
zinc oxide 1314-13-2	negative	intraperitoneal		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

Carcinogenicity

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
zinc oxide 1314-13-2	not carcinogenic	oral: drinking water	1 y daily	mouse	male/female	not specified

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
zinc oxide 1314-13-2	NOAEL P 7,5 mg/kg NOAEL F1 15 mg/kg	Two generation study	oral: gavage	rat	equivalent or similar to OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)

STOT-single exposure:

No data available.

STOT-repeated exposure::

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
zinc oxide 1314-13-2	NOAEL 31,52 mg/kg	oral: feed	13 w daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
zinc oxide 1314-13-2	NOAEL 1.5 mg/m3	inhalation	3 m 6 h/d, 5 d/w	rat	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)

Aspiration hazard:

No data available.

11.2 Information on other hazards

not applicable

SECTION 12: Ecological information

General ecological information:

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

12.1. Toxicity

Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
zinc oxide 1314-13-2	LC50	0,142 mg/l	96 h	Thymallus arcticus	OECD Guideline 203 (Fish, Acute Toxicity Test)
zinc oxide 1314-13-2	NOEC	0,44 mg/l	72 d	Oncorhynchus mykiss	other guideline:

Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
zinc oxide 1314-13-2	EC50	1 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic toxicity to aquatic invertebrates

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
zinc oxide 1314-13-2	NOEC	0,058 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
zinc oxide 1314-13-2	NOEC	0,017 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
zinc oxide 1314-13-2	EC50	0,17 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)

Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
zinc oxide 1314-13-2	IC50	5,2 mg/l	3 h	not specified	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability

The product is not biodegradable.

No substance data available.

12.3. Bioaccumulative potential

No data available.

No substance data available.

12.4. Mobility in soil

Cured adhesives are immobile.

No substance data available.

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
zinc oxide 1314-13-2	According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances.

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

No data available.

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

Product disposal:

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

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.

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 or ID number

ADR	3077
RID	3077
ADN	3077
IMDG	3077
IATA	3077

14.2. UN proper shipping name

ADR	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)
RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)
ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)
IATA	Environmentally hazardous substance, solid, n.o.s. (Zinc oxide)

14.3. Transport hazard class(es)

ADR	9
RID	9
ADN	9
IMDG	9
IATA	9

14.4. Packing group

ADR	III
RID	III
ADN	III
IMDG	III
IATA	III

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	Marine pollutant
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable
	Tunnelcode:
RID	not applicable
ADN	not applicable
IMDG	IMDG-Code: Segregation group 7- Heavy metals and their salts
IATA	not applicable

The transport classifications in this section apply generally to packed and bulk goods alike. For containers with a net volume of no more than 5 L for liquid substances or a net mass of no more than 5 kg for solid substances per individual or inner package, the exemptions SP 375 (ADR), A197 (IATA), 2.10.2.7 (IMDG) may be applied, which can result in a deviation from the transport classification for packed goods.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
VOC content (2010/75/EC)	< 5,00 %

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:

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

ED:	Substance identified as having endocrine disrupting properties
EU OEL:	Substance with a Union workplace exposure limit
EU EXPLD 1:	Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD 2	Substance listed in Annex II, Reg (EC) No. 2019/1148
SVHC:	Substance of very high concern (REACH Candidate List)
PBT:	Substance fulfilling persistent, bioaccumulative and toxic criteria
PBT/vPvB:	Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria
vPvB:	Substance fulfilling very persistent and very bioaccumulative criteria

Further information:

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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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