

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

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LOCTITE 362 SN62 5C 0.46MM R known as SN62 362 5C

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

1.1. Product identifier

LOCTITE 362 SN62 5C 0.46MM R known as SN62 362 5C

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

Intended use: Solder Wire

1.3. Details of the supplier of the safety data sheet

Henkel Belgium N.V.

Esplanade 1

1020 Brussels

Belgium

Phone: +32 (2) 421 2711 Fax-no.: +32 (2) 420 7025

ua-productsafety.uk@henkel.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):

Toxic to reproduction Category 1A

H360FD May damage fertility. May damage the unborn child.

Effects on or via lactation

H362 May cause harm to breast-fed children.

Specific target organ toxicity - repeated exposure Category 1

H372 Causes damage to organs (Blood, Kidney, Central Nervous system) through prolonged or repeated exposure (inhalation-dust, oral)

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains Lead

Signal word: Danger

Hazard statement: H360FD May damage fertility. May damage the unborn child.

H362 May cause harm to breast-fed children.

H372 Causes damage to organs (Blood, Kidney, Central Nervous system) through

prolonged or repeated exposure (inhalation-dust, oral)

Supplemental information Restricted to professional users.

Precautionary statement: P201 Obtain special instructions before use.

Prevention P261 Avoid breathing fume.

P263 Avoid contact during pregnancy and while nursing.

P280 Wear protective gloves/protective clothing.

Precautionary statement:

Response

P308+P313 IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

This product contains modified rosin.

Avoid breathing fumes given out during soldering.

After handling solder wash hands with soap and water before eating, drinking or smoking.

Flux fumes may irritate the nose, throat and lungs and may after prolonged/repeated exposure give an allergic reaction (asthma). Keep out of reach of children.

Do not heat above 500 °C

Regulations forbid the use of lead solder in any private or public drinking water supply system.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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

Hazardous components	EC Number	content	Classification
CAS-No.	REACH-Reg No.		
Tin	231-141-8	50- 100 %	
7440-31-5	01-2119486474-28		
Lead	231-100-4	25- 50 %	Lact.
7439-92-1	01-2119513221-59		H362
			Repr. 1A
			H360FD
			STOT RE 1; Oral
			H372
			STOT RE 1; Inhalation - dust
			H372
			====
			EU. REACH Candidate List of Substances of
			Very High Concern for Authorization
			(SVHC)
Silver	231-131-3	1-< 5 %	
7440-22-4			

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:

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

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:

Do not induce vomiting.

Seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed

Flux fumes may irritate the nose, throat and lungs and may after prolonged/repeated exposure give an allergic reaction (asthma).

Prolonged or repeated contact may cause skin irritation.

Prolonged or repeated contact may cause eye irritation.

Prolonged or repeated skin contact with silver and its salts may cause a blue-gray discoloration of the skin and mucous membranes that is irreversible (Argyria).

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:

Carbon dioxide, foam, powder

Fine water spray

Extinguishing media which must not be used for safety reasons:

Do not use water on fires where molten metal is present.

5.2. Special hazards arising from the substance or mixture

High temperatures may produce heavy metal dust, fumes or vapours.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Additional information:

The product itself does not burn. Any fire extinguishing action should be appropriate to the surroundings.

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

Scrape up spilled material and place in a closed 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

Extraction is necessary to remove fumes evolved during reflow.

When using do not eat, drink or smoke.

Wash hands before breaks and immediately after handling the product.

Avoid breathing fumes given out during soldering.

Do not heat above 500 °C

Hygiene measures:

Good industrial hygiene practices should be observed.

Do not eat, drink or smoke while working.

After handling solder wash hands with soap and water before eating, drinking or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Refer to Technical Data Sheet

7.3. Specific end use(s)

Solder Wire

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for

Great Britain

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Lead 7439-92-1 [LEAD AND LEAD COMPOUNDS, OTHER THAN LEAD ALKYLS (AS PB)]		0,15	Time Weighted Average (TWA):		EH40 WEL
Lead 7439-92-1 [INORGANIC LEAD AND ITS COMPOUNDS]		0,15	Time Weighted Average (TWA):		EU_OEL
Lead 7439-92-1 [LEAD]		0,075	TWA (40 h) air exposure limit for medical surveillance:		EU_OEL_II
Lead 7439-92-1 [LEAD]			Biological Limit Value:		EU_OEL_II
Lead 7439-92-1 [LEAD]			Biological Limit Value for medical surveillance:		EU_OEL_II
Silver 7440-22-4 [SILVER (METALLIC)]		0,1	Time Weighted Average (TWA):		EH40 WEL
Silver 7440-22-4 [SILVER, METALLIC]		0,1	Time Weighted Average (TWA):	Indicative	ECTLV

Occupational Exposure Limits

Valid for

Ireland

Ingredient [Regulated substance]	ppm	mg/m³	Value type	Short term exposure limit category / Remarks	Regulatory list
Tin 7440-31-5 [TIN, METAL (AS SN)]		2	Time Weighted Average (TWA):	Indicative OELV	IR_OEL
Tin 7440-31-5 [TIN (INORGANIC COMPOUNDS AS SN)]		2	Time Weighted Average (TWA):	Indicative	ECTLV
Lead 7439-92-1 [LEAD AND ITS COMPOUNDS (EXCEPT TETRAETHYL LEAD)]		0,15	Time Weighted Average (TWA):	Binding OELV	IR_OEL
Lead 7439-92-1 [INORGANIC LEAD AND ITS COMPOUNDS]		0,15	Time Weighted Average (TWA):		EU_OEL
Lead 7439-92-1 [LEAD]		0,075	TWA (40 h) air exposure limit for medical surveillance:		EU_OEL_II
Lead 7439-92-1 [LEAD]			Biological Limit Value:		EU_OEL_II
Lead 7439-92-1 [LEAD]			Biological Limit Value for medical surveillance:		EU_OEL_II
Silver 7440-22-4 [SILVER (METALLIC)]		0,1	Time Weighted Average (TWA):	Indicative OELV	IR_OEL
Silver 7440-22-4 [SILVER, METALLIC]		0,1	Time Weighted Average (TWA):	Indicative	ECTLV

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value		Remarks		
	•	•	mg/l	ppm	mg/kg	others	
Tin	aqua						no hazard identified
7440-31-5	(freshwater)						
Tin	aqua (marine						no hazard identified
7440-31-5	water)						
Tin	sewage						no hazard identified
7440-31-5	treatment plant						
	(STP)						
Tin	sediment						no hazard identified
7440-31-5	(freshwater)						
Tin	sediment						no hazard identified
7440-31-5	(marine water)						
Tin	Air						no hazard identified
7440-31-5							
Tin	Soil						no hazard identified
7440-31-5							
Tin	Predator						no potential for
7440-31-5							bioaccumulation
Lead	aqua		0,0031				
7439-92-1	(freshwater)		mg/l				
Lead	aqua (marine		0,0035				
7439-92-1	water)		mg/l				
Lead	sewage		0,1 mg/l				
7439-92-1	treatment plant						
	(STP)						
Lead	sediment				174 mg/kg		
7439-92-1	(freshwater)						
Lead	sediment				164 mg/kg		
7439-92-1	(marine water)						
Lead	Soil				212 mg/kg		
7439-92-1							
Lead	oral				10,9 mg/kg		
7439-92-1							

$\label{eq:Derived No-Effect Level (DNEL): Policy of the property of the prop$

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Tin 7440-31-5	General population	dermal	Long term exposure - systemic effects		80 mg/kg	no hazard identified
Tin 7440-31-5	Workers	inhalation	Long term exposure - systemic effects		71 mg/m3	no hazard identified
Tin 7440-31-5	Workers	dermal	Long term exposure - systemic effects		10 mg/kg	no hazard identified
Tin 7440-31-5	General population	inhalation	Long term exposure - systemic effects		17 mg/m3	no hazard identified
Tin 7440-31-5	General population	oral	Long term exposure - systemic effects		5 mg/kg	no hazard identified

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Extraction is necessary to remove fumes evolved during reflow. Ensure adequate ventilation, especially in confined areas.

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

In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN

This recommendation should be matched to local conditions.

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; \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

Appearance solid

> solid grey

Odor None

Odour threshold No data available / Not applicable

pΗ No data available / Not applicable

Melting point 179 °C (354.2 °F)

Solidification temperature No data available / Not applicable Initial boiling point No data available / Not applicable

Flash point $> 100 \, ^{\circ}\text{C} \, (> 212 \, ^{\circ}\text{F})$

Evaporation rate No data available / Not applicable Flammability No data available / Not applicable Explosive limits No data available / Not applicable

Vapour pressure Not applicable

Relative vapour density: No data available / Not applicable

Density

8,5 g/cm3 ()

Bulk density No data available / Not applicable No data available / Not applicable Solubility

Solubility (qualitative) Insoluble

(Solvent: Water)

Partition coefficient: n-octanol/water Not determined

No data available / Not applicable Auto-ignition temperature No data available / Not applicable Decomposition temperature

Viscosity
No data available / Not applicable
Viscosity (kinematic)
No data available / Not applicable
Explosive properties
No data available / Not applicable
Oxidising properties
No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Solder alloy will react with concentrated nitric acid to produce toxic fumes of nitrogen oxides. Reaction with strong oxidants.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

Stable under normal conditions of storage and use.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 11: Toxicological information

General toxicological information:

Fumes emitted during soldering may irritate the skin.

Prolonged or repeated contact may cause skin irritation.

Prolonged or repeated contact may cause eye irritation.

11.1. Information on toxicological effects

Acute oral 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
Tin 7440-31-5	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
Lead 7439-92-1	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
Silver 7440-22-4	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)

Acute dermal toxicity:

Prolonged or repeated skin contact with silver and its salts may cause a blue-gray discoloration of the skin and mucous membranes that is irreversible (Argyria).

Hazardous substances	Value	Value	Species	Method
CAS-No.	type			
Tin	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
7440-31-5				
Lead	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
7439-92-1				

Acute inhalative toxicity:

Fumes evolved at soldering temperatures will irritate the nose, throat and lungs. Prolonged or repeated exposure to flux fumes may result in sensitisation in sensitive workers.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
Lead 7439-92-1	LC50	> 5,05 mg/l	dust/mist	4 h	rat	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
Tin	not irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
7440-31-5				
Silver	slightly		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
7440-22-4	irritating			

Serious eye damage/irritation:

Fumes emitted during soldering may irritate the eyes.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Tin 7440-31-5	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Silver 7440-22-4	slightly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

No data available.

Germ cell mutagenicity:

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

Hazardous substances	Result	Type of study /	Metabolic	Species	Method
CAS-No.		Route of	activation /		
		administration	Exposure time		
Tin	negative	bacterial reverse	with and without		OECD Guideline 471
7440-31-5		mutation assay (e.g			(Bacterial Reverse Mutation
		Ames test)			Assay)
Tin	negative	in vitro mammalian	with and without		OECD Guideline 473 (In vitro
7440-31-5		chromosome			Mammalian Chromosome
		aberration test			Aberration Test)
Tin	negative	mammalian cell	with and without		OECD Guideline 476 (In vitro
7440-31-5		gene mutation assay			Mammalian Cell Gene
					Mutation Test)

Carcinogenicity

No data available.

Reproductive toxicity:

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

Hazardous substances	Result / Value	Test type	Route of	Species	Method
CAS-No.			application		
Tin	NOAEL P > 1.000 mg/kg		oral: gavage	rat	OECD Guideline 421
7440-31-5					(Reproduction /
					Developmental Toxicity
					Screening Test)

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
Tin	NOAEL > 1.000 mg/kg	oral: gavage	28 days	rat	OECD Guideline 407
7440-31-5			daily		(Repeated Dose 28-Day
					Oral Toxicity in Rodents)

Aspiration hazard:

No data available.

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
Tin 7440-31-5	LC50		96 h	1 1	OECD Guideline 203 (Fish, Acute Toxicity Test)

Toxicity (Daphnia):

No data available.

Chronic toxicity to aquatic invertebrates

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

Hazardous substances	Value	Value	Exposure time	Species	Method
CAS-No.	type				
Tin	NOEC		7 d	Ceriodaphnia dubia	other guideline:
7440-31-5					

Toxicity (Algae):

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

Hazardous substances	Value	Value	Exposure time	Species	Method
CAS-No.	type				
Tin	EC50		72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga,
7440-31-5				_	Growth Inhibition Test)
Tin	NOEC		72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga,
7440-31-5				_	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	Value	Value	Exposure time	Species	Method
CAS-No.	type				
Tin	EC50		3 h	activated sludge of a	OECD Guideline 209
7440-31-5				predominantly domestic sewage	(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.

12.4. Mobility in soil

The product is insoluble and sinks in water.

No substance data available.

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
Tin 7440-31-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Lead 7439-92-1	According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances.
Silver 7440-22-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Otherwise dispose of in accordance with local and national regulations.

Wherever possible unwanted solder alloy should be recycled for recovery of metal.

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

06 04 05 - wastes containing other heavy metals

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

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.2. UN proper shipping name

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.3. Transport hazard class(es)

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.4. Packing group

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.5. Environmental hazards

ADR	not applicable
ADK	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 15: Regulatory information

$15.1.\ Safety, health\ and\ environmental\ regulations/legislation\ specific\ for\ the\ substance\ or\ mixture$

VOC content (2010/75/EC) < 3 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Great Britain):

Remarks

The Health & Safety at Work Act 1974.

The Control of Lead at Work Regulations. L132:Control of Lead at Work:

Approved Code of Practice and Guidance.

The Control of Substances Hazardous to Health Regulations. L5:General Approved Code of Practice to the COSHH Regulations. HS(G)97:A Step by Step Guide to the COSHH Regulations. HS(G)193:COSHH essentials: Easy steps to control chemicals.

IND (G)248L:Solder fume and you. IND(G)249L:Controlling health risks from rosin (colophony) based solder fluxes.

Employees should be under medical surveillance if the risk assessment made under the Control of Lead at Work Regulations indicates they are likely to be exposed to significant concentrations of lead, or if an Employment Medical Advisor or appointed doctor so certifies.

A woman employed on work which exposes her to lead should notify her employer as soon as possible if she becomes pregnant. The Employment Medical Advisor / Appointed Doctor should be informed of the pregnancy.

Under the Management of Health and Safety at Work Regulations, employers are required to assess the particular risks to health at work of pregnant workers and workers who have recently given birth or who are breast feeding.

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:

H360FD May damage fertility. May damage the unborn child.

H362 May cause harm to breast-fed children.

H372 Causes damage to organs through prolonged or repeated exposure.

Further information:

This Safety Data Sheet has been produced for sales from Henkel to parties purchasing from Henkel, is based on Regulation (EC) No 1907/2006 and provides information in accordance with applicable regulations of the European Union only. In that respect, no statement, warranty or representation of any kind is given as to compliance with any statutory laws or regulations of any other jurisdiction or territory other than the European Union. When exporting to territories other than the European Union, please consult with the respective Safety Data Sheet of the concerned territory to ensure compliance or liaise with Henkel's Product Safety and Regulatory Affairs Department (ua-productsafety.de@henkel.com) prior to export to other territories than the European Union.

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