



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

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LOCTITE C 400 60EN 5C 0.9MM S known as 60EN CRYSTAL  
400 5C

SDS No. : 175674  
V005.0

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

#### 1.1. Product identifier

LOCTITE C 400 60EN 5C 0.9MM S known as 60EN CRYSTAL 400 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

<b>Signal word:</b>	Danger
<b>Hazard statement:</b>	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)
<b>Supplemental information</b>	Restricted to professional users.
<b>Precautionary statement:</b>	P201 Obtain special instructions before use.
<b>Prevention</b>	P261 Avoid breathing fume. P263 Avoid contact during pregnancy and while nursing. P280 Wear protective gloves/protective clothing.
<b>Precautionary statement:</b>	P308+P313 IF exposed or concerned: Get medical advice/attention.
<b>Response</b>	

**2.3. Other hazards**

This product contains modified rosin.

Avoid breathing fumes given out during soldering.

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

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

Keep out of reach of children.

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

Do not heat above 500 °C

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 CAS-No.	EC Number REACH-Reg No.	content	Classification
Lead 7439-92-1	231-100-4 01-2119513221-59	25- 50 %	Lact. 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)
Tin 7440-31-5	231-141-8 01-2119486474-28	50- 100 %	

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:  
Flush eyes with plenty of water for at least 5 minutes. If irritation persists seek medical attention.

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.

#### **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  
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.  
The flux medium will give rise to irritating fumes.

#### **5.3. Advice for firefighters**

Wear self-contained breathing apparatus.

##### **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**

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  
See advice in section 8

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**

Ensure good ventilation/extraction.  
Store in a cool, dry place.  
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

<b>Ingredient [Regulated substance]</b>	<b>ppm</b>	<b>mg/m<sup>3</sup></b>	<b>Value type</b>	<b>Short term exposure limit category / Remarks</b>	<b>Regulatory list</b>
Lead 7439-92-1 [LEAD AND LEAD COMPOUNDS, OTHER THAN LEAD ALKYL (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

**Occupational Exposure Limits**Valid for  
Ireland

<b>Ingredient [Regulated substance]</b>	<b>ppm</b>	<b>mg/m<sup>3</sup></b>	<b>Value type</b>	<b>Short term exposure limit category / Remarks</b>	<b>Regulatory list</b>
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

**Predicted No-Effect Concentration (PNEC):**

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

**Derived No-Effect Level (DNEL):**

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.

Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.

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

In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387).

This recommendation should be matched to local conditions.

**Hand protection:**

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.

The use of chemical resistant gloves such as Nitrile is recommended.

**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
	grey
Odor	None
Odour threshold	No data available / Not applicable
pH	Not applicable
Melting point	183,0 - 188,0 °C (361.4 - 370.4 °F)
Solidification temperature	No data available / Not applicable
Initial boiling point	Not determined
Flash point	Not applicable
Evaporation rate	No data available / Not applicable
Flammability	No data available / Not applicable
Explosive limits	No data available / Not applicable
Vapour pressure	Not determined
Relative vapour density:	No data available / Not applicable
Density	8,5000 g/cm <sup>3</sup>
( )	
Bulk density	No data available / Not applicable
Solubility	No data available / Not applicable
Solubility (qualitative)	Insoluble
Partition coefficient: n-octanol/water	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Decomposition temperature	No data available / Not applicable
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.

**10.2. Chemical stability**

Stable under recommended storage conditions.

**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**

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:**

Prolonged or repeated contact may cause skin irritation.

Prolonged or repeated contact may cause eye irritation.

Fumes emitted during soldering may irritate the skin.

**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
Lead 7439-92-1	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
Tin 7440-31-5	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (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
Lead 7439-92-1	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Tin 7440-31-5	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)



**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 7440-31-5	not irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

**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)

**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 CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Tin 7440-31-5	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Tin 7440-31-5	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Tin 7440-31-5	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro 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 CAS-No.	Result / Value	Test type	Route of application	Species	Method
Tin 7440-31-5	NOAEL P > 1.000 mg/kg		oral: gavage	rat	OECD Guideline 421 (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 7440-31-5	NOAEL > 1.000 mg/kg	oral: gavage	28 days daily	rat	OECD Guideline 407 (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	Pimephales promelas	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 CAS-No.	Value type	Value	Exposure time	Species	Method
Tin 7440-31-5	NOEC		7 d	Ceriodaphnia dubia	other guideline:

**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
Tin 7440-31-5	EC50		72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Tin 7440-31-5	NOEC		72 h	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
Tin 7440-31-5	EC50		3 h	activated sludge of a predominantly domestic sewage	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.

**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
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.
Tin 7440-31-5	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:

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

Otherwise dispose of in accordance with local and national regulations.

Disposal of uncleaned packages:

Dispose of as unused product.

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
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 < 5,0 %  
(2010/75/EC)

**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.  
 UK National Health & Safety Regulations: The Control of Lead at Work Regulations 2002

**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:**

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