



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

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LOCTITE 311 HMP 3C 2.0MM U known as HMP 311 3C

SDS No. : 221820  
V002.5

Revision: 03.06.2015  
printing date: 01.04.2016

Replaces version from: 25.11.2013

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

#### 1.1. Product identifier

LOCTITE 311 HMP 3C 2.0MM U known as HMP 311 3C

#### 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 Ltd  
Wood Lane End  
HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 1442 278000  
Fax-no.: +44 1442 278071

ua-productsafety.uk@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):

The substance or mixture is not hazardous according to Regulation (EC) No 1272/2008 (CLP).

#### 2.2. Label elements

##### Label elements (CLP):

The substance or mixture is not hazardous according to Regulation (EC) No 1272/2008 (CLP).

**Supplemental information** EUH210 Safety data sheet available on request.

#### 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

**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	80- 100 %	
Tin 7440-31-5	231-141-8 01-2119486474-28	1- 5 %	
Silver 7440-22-4	231-131-3	1- 5 %	

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).

**4.3. Indication of any immediate medical attention and special treatment needed**

See section: Description of first aid measures

**SECTION 5: Firefighting measures****Combustion behaviour:**

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

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

**5.3. Advice for firefighters**

Wear self-contained breathing apparatus.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

Wear protective equipment.

**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.

**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.

See advice in section 8

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**

Ensure good ventilation/extraction.

Store in a cool, dry place.

**7.3. Specific end use(s)**

Solder Wire

<b>SECTION 8: Exposure controls/personal protection</b>
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**8.1. Control parameters****Occupational Exposure Limits**Valid for  
Great Britain

Ingredient [Regulated substance]	ppm	mg/m <sup>3</sup>	Value type	Short term exposure limit category / Remarks	Regulatory list
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 AND ITS IONIC COMPOUNDS]			Biological Limit Value:		EU_OEL_II
Tin 7440-31-5 [TIN (INORGANIC COMPOUNDS AS SN)]		2	Time Weighted Average (TWA):	Indicative	ECTLV
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

**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)					5,6 µg/L	
Lead 7439-92-1	aqua (marine water)					3,4 µg/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				147 mg/kg		
Lead 7439-92-1	oral					10,9 mg/kg food	
Lead 7439-92-1	STP					100 µg/L	

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

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Tin 7440-31-5	Workers	Dermal	Acute/short term exposure - systemic effects		133,3 mg/kg	
Tin 7440-31-5	Workers	Inhalation	Acute/short term exposure - systemic effects		11,75 mg/m3	
Tin 7440-31-5	Workers	Dermal	Long term exposure - systemic effects		133,3 mg/kg	
Tin 7440-31-5	Workers	Inhalation	Long term exposure - systemic effects		11,75 mg/m3	
Tin 7440-31-5	general population	Dermal	Acute/short term exposure - systemic effects		80 mg/kg	
Tin 7440-31-5	general population	Inhalation	Acute/short term exposure - systemic effects		3,476 mg/m3	
Tin 7440-31-5	general population	oral	Acute/short term exposure - systemic effects		80 mg/kg	
Tin 7440-31-5	general population	Dermal	Long term exposure - systemic effects		80 mg/kg	
Tin 7440-31-5	general population	Inhalation	Long term exposure - systemic effects		3,476 mg/m3	
Tin 7440-31-5	general population	oral	Long term exposure - systemic effects		80 mg/kg	

**Biological Exposure Indices:**

Ingredient [Regulated substance]	Parameters	Biological specimen	Sampling time	Conc.	Basis of biol. exposure index	Remark	Additional Information
Lead 7439-92-1 [LEAD AND ITS IONIC COMPOUNDS]	Lead	Blood			EU HCA2		

**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.

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.

Skin protection:  
Wear suitable protective clothing.

## 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
Initial boiling point	Not determined
Flash point	Not applicable
Decomposition temperature	No data available / Not applicable
Vapour pressure	No data available / Not applicable
Density	11,1 g/cm <sup>3</sup>
( )	
Bulk density	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
Solubility (qualitative)	Insoluble
Solidification temperature	No data available / Not applicable
Melting point	296 - 301 °C (564.8 - 573.8 °F)
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	No data available / Not applicable
Partition coefficient: n-octanol/water	Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	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

None if used properly.

### 10.6. Hazardous decomposition products

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

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****General toxicological information:**

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

**Oral toxicity:**

This material is considered to have low toxicity if swallowed.

**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.

**Dermal toxicity:**

This product is considered to have low dermal toxicity.

**Skin irritation:**

Fumes emitted during soldering may irritate the skin.

**Eye irritation:**

Fumes emitted during soldering may irritate the eyes.

**Acute oral toxicity:**

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
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**Acute inhalative toxicity:**

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
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**Acute dermal toxicity:**

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
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**Skin corrosion/irritation:**

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Silver 7440-22-4	slightly irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

**Serious eye damage/irritation:**

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Silver 7440-22-4	slightly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

**SECTION 12: Ecological information****General ecological information:**

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

**12.1. Toxicity****Ecotoxicity:**

No data available for the product.  
Do not empty into drains / surface water / ground water.

**12.2. Persistence and degradability****Persistence and Biodegradability:**

The product is not biodegradable.

**12.3. Bioaccumulative potential / 12.4. Mobility in soil****Mobility:**

The product is insoluble and sinks in water.

**Bioaccumulative potential:**

Octanol/Water distribution coefficient: Not applicable

**12.5. Results of PBT and vPvB assessment**

Hazardous components CAS-No.	PBT/vPvB
Lead 7439-92-1	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



**SECTION 14: Transport information**

- 14.1. UN number**  
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.2. UN proper shipping name**  
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.3. Transport hazard class(es)**  
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.4. Packaging group**  
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.5. Environmental hazards**  
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.6. Special precautions for user**  
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.7. Transport in bulk according to Annex II of MARPOL 73/78 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 %

**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 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.  
The Control of Lead at Work Regulations. L132: Control of Lead at Work: Approved Code of Practice and Guidance.  
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

**Further information:**

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.

**Label elements (DPD):**

The product is not subject to classification according to the calculation methods of the "General Classification Guideline for Preparations of the EC" as issued in the last version.

**Additional labeling:**

Safety data sheet available for professional user on request.

**Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.**