



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

Page 1 of 13

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V004.4

LOCTITE PC 21A 5L FR known as PC21A LIQUID FLUX

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

1.1. Product identifier

LOCTITE PC 21A 5L FR known as PC21A LIQUID FLUX

Contains:

Propan-2-ol
Rosin

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

Intended use:
Liquid Flux

1.3. Details of the supplier of the safety data sheet

Henkel AG & Co. KGaA
Henkelstr. 67
40191 Düsseldorf

Germany

Phone: +49 (211) 797-0

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):

Flammable liquids	Category 2
H225 Highly flammable liquid and vapor.	
Serious eye irritation	Category 2
H319 Causes serious eye irritation.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Specific target organ toxicity - single exposure	Category 3
H336 May cause drowsiness or dizziness.	
Target organ: Central Nervous System	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:**Signal word:**

Danger

Hazard statement:

H225 Highly flammable liquid and vapor.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

**Precautionary statement:
Prevention**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
No smoking.
P261 Avoid breathing fume.

**Precautionary statement:
Response**

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.

2.3. Other hazards

Avoid breathing fumes given out during soldering.

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

Keep out of reach of children.

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

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
Propan-2-ol 67-63-0	200-661-7 01-2119457558-25	60- 70 %	Flam. Liq. 2 H225 Eye Irrit. 2 H319 STOT SE 3 H336
Rosin 8050-09-7	232-475-7 01-2119480418-32	30- 40 %	Skin Sens. 1 H317

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.

Seek medical advice.

Eye contact:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Seek medical advice.

Ingestion:
Do not induce vomiting.
Seek medical advice.

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

SKIN: Rash, Urticaria.

EYE: Irritation, conjunctivitis.

Vapors may cause drowsiness and dizziness.

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:

Alcohol-resistant foam.

5.2. Special hazards arising from the substance or mixture

Can form explosive gas/air mixtures.

Oxides of carbon.

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

5.3. Advice for firefighters

Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes.

Wear protective equipment.

6.2. Environmental precautions

Do not let product enter drains.

Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up

Remove all sources of ignition.

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.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Use only in well-ventilated areas.

Keep away from sources of ignition - no smoking.

Wear suitable protective clothing, safety glasses and gloves.

See advice in section 8

Take measures to prevent the build-up of electrostatic charges.

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.
Store in a cool, well-ventilated place.
Keep away from sources of ignition.

7.3. Specific end use(s)

Liquid Flux

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
Propan-2-ol 67-63-0 [PROPAN-2-OL]	500	1.250	Short Term Exposure Limit (STEL):		EH40 WEL
Propan-2-ol 67-63-0 [PROPAN-2-OL]	400	999	Time Weighted Average (TWA):		EH40 WEL
Rosin 8050-09-7 [ROSIN-BASED SOLDER FLUX FUME]		0,05	Time Weighted Average (TWA):		EH40 WEL
Rosin 8050-09-7 [ROSIN-BASED SOLDER FLUX FUME]		0,15	Short Term Exposure Limit (STEL):		EH40 WEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Propan-2-ol 67-63-0	aqua (freshwater)					140,9 mg/L	
Propan-2-ol 67-63-0	aqua (marine water)					140,9 mg/L	
Propan-2-ol 67-63-0	sediment (freshwater)				552 mg/kg		
Propan-2-ol 67-63-0	sediment (marine water)				552 mg/kg		
Propan-2-ol 67-63-0	soil				28 mg/kg		
Propan-2-ol 67-63-0	aqua (intermittent releases)					140,9 mg/L	
Propan-2-ol 67-63-0	STP					2251 mg/L	
Propan-2-ol 67-63-0	oral					160 mg/kg food	
Rosin 8050-09-7	aqua (freshwater)					0,005 mg/L	
Rosin 8050-09-7	aqua (marine water)					0,0005 mg/L	
Rosin 8050-09-7	sediment (freshwater)				108 mg/kg		
Rosin 8050-09-7	sediment (marine water)				10,8 mg/kg		
Rosin 8050-09-7	soil				21,4 mg/kg		
Rosin 8050-09-7	STP					1000 mg/L	

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Propan-2-ol 67-63-0	Workers	Dermal	Long term exposure - systemic effects		888 mg/kg bw/day	
Propan-2-ol 67-63-0	Workers	Inhalation	Long term exposure - systemic effects		500 mg/m3	
Propan-2-ol 67-63-0	general population	Dermal	Long term exposure - systemic effects		319 mg/kg bw/day	
Propan-2-ol 67-63-0	general population	Inhalation	Long term exposure - systemic effects		89 mg/m3	
Propan-2-ol 67-63-0	general population	oral	Long term exposure - systemic effects		26 mg/kg bw/day	
Rosin 8050-09-7	Workers	Inhalation	Long term exposure - systemic effects		176,32 mg/m3	
Rosin 8050-09-7	Workers	Dermal	Long term exposure - systemic effects		25 mg/kg bw/day	
Rosin 8050-09-7	general population	Inhalation	Long term exposure - systemic effects		52,174 mg/m3	
Rosin 8050-09-7	general population	Dermal	Long term exposure - systemic effects		15 mg/kg bw/day	
Rosin 8050-09-7	general population	oral	Long term exposure - systemic effects		15 mg/kg bw/day	

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure adequate ventilation, especially in confined areas.

Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.
Extraction is necessary to remove fumes evolved during reflow.

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:

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	liquid
Odor	Amber alcohol-like
Odour threshold	No data available / Not applicable
pH	Not applicable
Initial boiling point	82,0 °C (179.6 °F)
Flash point	12,0 °C (53.6 °F)
Decomposition temperature	No data available / Not applicable
Vapour pressure	6,6 kPa
(25,0 °C (77 °F))	
Density	0,880 g/cm ³
(25 °C (77 °F))	
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)	Partially miscible
(Solvent: Water)	
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	
lower	2,00 %(V)

upper	12,00 %(V)
Partition coefficient: n-octanol/water	Not determined
Evaporation rate	No data available / Not applicable
Vapor density	Heavier than air
Oxidising properties	No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reaction with strong oxidants.
Dissolves aluminium and zinc slowly with formation of hydrogen.

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.

STOT-single exposure:

May cause drowsiness or dizziness.

Oral toxicity:

May cause irritation to the digestive tract.
Ingestion of large quantities may cause liver or kidney damage.

Inhalative toxicity:

Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
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.

Skin irritation:

Prolonged or repeated contact may cause skin irritation.

Eye irritation:

Causes serious eye irritation.
Liquid may cause conjunctival irritation.

Sensitizing:

May cause an allergic skin reaction.

Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Propan-2-ol 67-63-0	LD50	5.338 mg/kg	oral		rat	
Rosin 8050-09-7	LD50	2.800 mg/kg	oral		rat	

Acute inhalative toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Propan-2-ol 67-63-0	LC50	72,6 mg/l		4 h	rat	

Acute dermal toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Propan-2-ol 67-63-0	LD50	12.870 mg/kg	dermal		rabbit	
Rosin 8050-09-7	LD50	> 2.000 mg/kg	dermal		rat	OECD Guideline 402 (Acute Dermal Toxicity)

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Propan-2-ol 67-63-0	slightly irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Rosin 8050-09-7	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Propan-2-ol 67-63-0	moderately irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Rosin 8050-09-7	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
Propan-2-ol 67-63-0	not sensitising	Buehler test	guinea pig	

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Propan-2-ol 67-63-0	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		
Rosin 8050-09-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)

Repeated dose toxicity

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Propan-2-ol 67-63-0	NOAEL=1500	inhalation	13 weeks6 hours/day, 5 days/week	mouse	
Propan-2-ol 67-63-0	LOAEL=5000	inhalation	13 weeks6 hours/day, 5 days/week	mouse	

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:**

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

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Propan-2-ol 67-63-0	LC50	9.640 mg/l	Fish	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Propan-2-ol 67-63-0	EC50	13.299 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Propan-2-ol 67-63-0	EC50	> 1.000 mg/l	Algae	96 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
	NOEC	1.000 mg/l	Algae	96 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Propan-2-ol 67-63-0	NOEC	30 mg/l	chronic Daphnia	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Rosin 8050-09-7	LC50	> 1.000 mg/l	Fish	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Rosin 8050-09-7	EC50	911 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Rosin 8050-09-7	EC50	> 100 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	DIN 38412-09

12.2. Persistence and degradability

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
Propan-2-ol 67-63-0	readily biodegradable	aerobic	70 - 84 %	EU Method C.4-E (Determination of the "Ready" Biodegradability Closed Bottle Test)
Rosin 8050-09-7		aerobic	36 - 46 %	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)

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

Octanol/Water distribution coefficient: Not determined

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
Propan-2-ol 67-63-0	0,05					OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Rosin 8050-09-7	3 - 6,2					OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)

12.5. Results of PBT and vPvB assessment

Hazardous components CAS-No.	PBT/vPvB
Propan-2-ol 67-63-0	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Rosin 8050-09-7	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:

Dispose of as hazardous waste in compliance with local and national regulations.
Incineration under controlled conditions is recommended.

Disposal of uncleaned packages:

Dispose of as unused product.

Waste code

14 06 03 - other solvents and solvent mixtures

SECTION 14: Transport information**14.1. UN number**

ADR	1219
RID	1219
ADN	1219
IMDG	1219
IATA	1219

14.2. UN proper shipping name

ADR	ISOPROPANOL (solution)
RID	ISOPROPANOL (solution)
ADN	ISOPROPANOL (solution)
IMDG	ISOPROPANOL (solution)
IATA	Isopropanol (solution)

14.3. Transport hazard class(es)

ADR	3
RID	3
ADN	3
IMDG	3
IATA	3

14.4. Packaging group

ADR	II
RID	II
ADN	II
IMDG	II
IATA	II

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 Tunnelcode: (D/E)
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

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 60 - 70 %
(1999/13/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 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.
HS(G)51: The Storage of Highly Flammable Liquids in Containers.
HS(G)140: The Safe Use and Handling of Highly Flammable Liquids EH9: The
Spraying of Highly Flammable Liquids.

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:

H225 Highly flammable liquid and vapor.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

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):

Xi - Irritant



F - Highly flammable



Risk phrases:

R11 Highly flammable.
R36 Irritating to eyes.
R43 May cause sensitisation by skin contact.
R67 Vapours may cause drowsiness and dizziness.

Safety phrases:

S16 Keep away from sources of ignition - No smoking.
S24 Avoid contact with skin.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37 Wear suitable gloves.
S51 Use only in well-ventilated areas.

Contains:

Rosin

**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.**

