



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

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LOCTITE MF 300 known as RS425-9379 FLUX PEN

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

1.1. Product identifier

LOCTITE MF 300 known as RS425-9379 FLUX PEN

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 Ireland
Operations and Research Limited
Tallaght Business Park
Dublin 24

Ireland

Phone: +353 (14046444)

Fax-no.: +353 (14519926)

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):

|| Serious eye irritation

Category 2

|| H319 Causes serious eye irritation.

2.2. Label elements

Label elements (CLP):

|| Hazard pictogram:



|| Signal word:

Warning

|| Hazard statement:

H319 Causes serious eye irritation.

Supplemental information Contains 2,4,7,9-Tetramethyldec-5-yne-4,7-diol. May produce an allergic reaction.

Precautionary statement: **P261 Avoid breathing fume.**
Prevention

Precautionary statement: **P337+P313 If eye irritation persists: Get medical advice/attention.**
Response

2.3. Other hazards

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
 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
Glutaric acid 110-94-1	203-817-2	1- < 5 %	Eye Irrit. 2 H319
Adipic acid 124-04-9	204-673-3 01-2119457561-38	1- < 3 %	Eye Dam. 1 H318
2,4,7,9-Tetramethyldec-5-yne-4,7-diol 126-86-3	204-809-1 01-2119954390-39	0,1- < 1 %	Eye Dam. 1 H318 Aquatic Chronic 3 H412 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

Prolonged or repeated contact may cause skin irritation.

EYE: Irritation, conjunctivitis.

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

The flux medium will give rise to irritating fumes.

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**

Wear protective equipment.

Avoid contact with skin and eyes.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent.

Store in a closed container until ready for disposal.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Avoid breathing fumes given out during soldering.

Use only in well-ventilated areas.

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.

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

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container.

Ensure good ventilation/extraction.

Refer to Technical Data Sheet

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

None

Occupational Exposure Limits

Valid for
Ireland

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Adipic acid 124-04-9 [ADIPIC ACID]		5	Time Weighted Average (TWA):		IR_OEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Adipic acid 124-04-9	aqua (freshwater)		0,126 mg/l				
Adipic acid 124-04-9	aqua (intermittent releases)		0,46 mg/l				
Adipic acid 124-04-9	aqua (marine water)		0,0126 mg/l				
Adipic acid 124-04-9	sewage treatment plant (STP)		59,1 mg/l				
Adipic acid 124-04-9	sediment (freshwater)				0,484 mg/kg		
Adipic acid 124-04-9	sediment (marine water)				0,0484 mg/kg		
Adipic acid 124-04-9	Soil				0,0228 mg/kg		

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Adipic acid 124-04-9	General population	oral	Acute/short term exposure - systemic effects		19 mg/kg	
Adipic acid 124-04-9	General population	dermal	Long term exposure - systemic effects		19 mg/kg	
Adipic acid 124-04-9	General population	oral	Long term exposure - systemic effects		19 mg/kg	
Adipic acid 124-04-9	General population	inhalation	Long term exposure - systemic effects		65 mg/m3	
Adipic acid 124-04-9	Workers	dermal	Acute/short term exposure - systemic effects		38 mg/kg	
Adipic acid 124-04-9	Workers	inhalation	Acute/short term exposure - systemic effects		264 mg/m3	
Adipic acid 124-04-9	Workers	inhalation	Acute/short term exposure - local effects		5 mg/m3	
Adipic acid 124-04-9	Workers	dermal	Long term exposure - systemic effects		38 mg/kg	
Adipic acid 124-04-9	Workers	inhalation	Long term exposure - systemic effects		264 mg/m3	
Adipic acid 124-04-9	Workers	inhalation	Long term exposure - local effects		5 mg/m3	
Adipic acid 124-04-9	General population	dermal	Acute/short term exposure - systemic effects		19 mg/kg	
Adipic acid 124-04-9	General population	inhalation	Acute/short term exposure - systemic effects		65 mg/m3	

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.

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; ≥ 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.

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	liquid
	Clear, Colorless
Odor	None
Odour threshold	No data available / Not applicable
pH	acidic
Melting point	0,0 °C (32 °F)
Solidification temperature	No data available / Not applicable
Initial boiling point	100,0 °C (212 °F)
Flash point	Does not flash.
Evaporation rate	No data available / Not applicable
Flammability	No data available / Not applicable
Explosive limits	No data available / Not applicable
Vapour pressure (20,0 °C (68 °F))	2,3300000 kPa
Relative vapour density:	No data available / Not applicable
Density ()	1,0110 g/cm ³
Bulk density	No data available / Not applicable
Solubility	No data available / Not applicable
Solubility (qualitative)	Soluble
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

Strong oxidizing agents.

Acids.

Strong bases.

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

General toxicological information:

An allergic reaction cannot be excluded after repeated skin contact.

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
Glutaric acid 110-94-1	LD50	6.000 mg/kg	mouse	not specified
Adipic acid 124-04-9	LD50	5.560 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
2,4,7,9-Tetramethyldec-5- yne-4,7-diol 126-86-3	LD50	> 5.000 mg/kg	rat	not specified

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
Adipic acid 124-04-9	LD50	> 7.940 mg/kg	rabbit	not specified
2,4,7,9-Tetramethyldec-5- yne-4,7-diol 126-86-3	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
Adipic acid 124-04-9	LC50	> 7,7 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
Adipic acid 124-04-9	slightly irritating	24 h	rabbit	not specified
2,4,7,9-Tetramethyldec-5- yne-4,7-diol 126-86-3	slightly irritating	4 h	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
Adipic acid 124-04-9	corrosive	24 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
2,4,7,9-Tetramethyldec-5- yne-4,7-diol 126-86-3	Category I		rabbit	EPA OTS 798.4500 (Acute Eye Irritation)

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
Adipic acid 124-04-9	not sensitising	Guinea pig maximisation test	guinea pig	not specified
2,4,7,9-Tetramethyldec-5- yne-4,7-diol 126-86-3	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

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
Adipic acid 124-04-9	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Adipic acid 124-04-9	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
2,4,7,9-Tetramethyldec-5- yne-4,7-diol 126-86-3	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
2,4,7,9-Tetramethyldec-5- yne-4,7-diol 126-86-3	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
2,4,7,9-Tetramethyldec-5- yne-4,7-diol 126-86-3	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:

No data available.

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
2,4,7,9-Tetramethyldec-5- yne-4,7-diol 126-86-3	NOAEL 150 mg/kg	oral: gavage	30 d 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
Glutaric acid 110-94-1	LC50	330 mg/l	24 h	Lepomis macrochirus	OECD Guideline 203 (Fish, Acute Toxicity Test)
Adipic acid 124-04-9	LC50	97 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
2,4,7,9-Tetramethyldec-5-yne-4,7-diol 126-86-3	LC50	36 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)

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
Adipic acid 124-04-9	EC50	46 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2,4,7,9-Tetramethyldec-5-yne-4,7-diol 126-86-3	EC50	99 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
Adipic acid 124-04-9	NOEC	6,3 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
Adipic acid 124-04-9	EC50	59 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Adipic acid 124-04-9	NOEC	41 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
2,4,7,9-Tetramethyldec-5-yne- 4,7-diol 126-86-3	NOEC	4,6 mg/l		Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
2,4,7,9-Tetramethyldec-5-yne- 4,7-diol 126-86-3	EC50	82 mg/l		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
Adipic acid 124-04-9	EC50	4.747 mg/l	3 h	activated sludge	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
2,4,7,9-Tetramethyldec-5-yne- 4,7-diol 126-86-3	EC 50	680 mg/l	3 h		OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability

No data available.

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
Glutaric acid 110-94-1	inherently biodegradable	aerobic	90 - 100 %		OECD Guideline 302 B (Inherent biodegradability: Zahn- Wellens/EMPA Test)
Glutaric acid 110-94-1	readily biodegradable		100 %	7 d	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)
Adipic acid 124-04-9	inherently biodegradable	aerobic	> 90 %	5 d	EU Method C.9 (Biodegradation: Zahn-Wellens Test)
Adipic acid 124-04-9	readily biodegradable	aerobic	83 %	30 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
2,4,7,9-Tetramethyldec-5-yne- 4,7-diol 126-86-3		aerobic	5 %		OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

Hazardous substances CAS-No.	LogPow	Temperature	Method
Glutaric acid 110-94-1	-0,29		not specified
Adipic acid 124-04-9	0,093	25 °C	other guideline:
2,4,7,9-Tetramethyldec-5-yne-4,7-diol 126-86-3	2,8	22 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
Adipic acid 124-04-9	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
2,4,7,9-Tetramethyldec-5-yne-4,7-diol 126-86-3	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 in accordance with local and national regulations.

Disposal of uncleaned packages:

Use packages for recycling only when totally empty.

Waste code

16 10 02 - aqueous liquid wastes other than those mentioned in 16 10 01

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**
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. Packing 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 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 < 1 %
(2010/75/EC)

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Great Britain):

Remarks	<p>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.</p>
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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:

- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H412 Harmful to aquatic life with long lasting effects.

Further information:

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