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

SDS No. : 180286
V008.0

LOCTITE LF 318 41K known as LF318 FLUX GEL

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

1.1. Product identifier
LOCTITE LF 318 41K known as LF318 FLUX GEL

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use:
Flux medium

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

ua-productsafety.uk@henkel.com
For Safety Data Sheet updates please visit our website https://mysds.henkel.com/index.html#/appSelection or www.henkel-adhesives.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):

Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Chronic hazards to the aquatic environment	Category 4
H413 May cause long lasting harmful effects to aquatic life.	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:

Contains rosin

Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine

Signal word:	Warning
Hazard statement:	H317 May cause an allergic skin reaction. H413 May cause long lasting harmful effects to aquatic life.
Precautionary statement: Prevention	P273 Avoid release to the environment. P280 Wear protective gloves.
Precautionary statement: Response	P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

2.3. Other hazards

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.
This product contains modified rosin.
Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

Following substances are present in a concentration >= 0,1% and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in concentration ≥ the concentration limit that are assessed to be a PBT, vPvB or ED.

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.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
rosin 8050-09-7 232-475-7 01-2119480418-32	20- 40 %	Skin Sens. 1, H317		
Modified rosin 144413-22-9 434-230-1, 434-230-1 01-2120117087-62	20- 40 %	Aquatic Chronic 4, H413		
White mineral oil (petroleum) 8042-47-5 232-455-8 01-2119487078-27	1- < 5 %	Asp. Tox. 1, H304		
benzotriazole 95-14-7 202-394-1 01-2119979079-20	1- < 5 %	Aquatic Chronic 2, H411 Acute Tox. 4, Oral, H302 Eye Irrit. 2, H319		
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0 309-629-8 01-2119979085-27	0,1- < 1 %	Skin Sens. 1B, H317 Aquatic Chronic 4, H413		

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:
Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

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

SKIN: Rash, Urticaria.

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:
Carbon dioxide, foam, powder
Fine water spray

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.
See section 10.

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.
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
Remove mechanically.
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.
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
Use only in well-ventilated areas.
Avoid open flames.
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.
Do not eat, drink or smoke while working.

7.2. Conditions for safe storage, including any incompatibilities
Refer to Technical Data Sheet

7.3. Specific end use(s)
Flux medium

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
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):	15 minutes	EH40 WEL

Occupational Exposure Limits

Valid for
Ireland

Ingredient [Regulated substance]	ppm	mg/m^3	Value type	Short term exposure limit category / Remarks	Regulatory list
Rosin 8050-09-7 [ROSIN CORE SOLDER PYROLYSIS PRODUCTS]		0,05	Time Weighted Average (TWA):		IR_OEL
Rosin 8050-09-7 [ROSIN CORE SOLDER PYROLYSIS PRODUCTS]		0,15	Short Term Exposure Limit (STEL):	15 minutes	IR_OEL
White mineral oil (petroleum) 8042-47-5 [MINERAL OILS THAT HAVE BEEN USED BEFORE IN INTERNAL COMBUSTION ENGINES TO LUBRICATE AND COOL THE MOVING PARTS WITHIN THE ENGINE]			Skin designation:	Can be absorbed through the skin.	IR_OEL
White mineral oil (petroleum) 8042-47-5 [MINERAL OILS THAT HAVE BEEN USED BEFORE IN INTERNAL COMBUSTION ENGINES TO LUBRICATE AND COOL THE MOVING PARTS WITHIN THE ENGINE]				Included in the regulation but with no data values. See regulation for further details	IR_OEL
White mineral oil (petroleum) 8042-47-5 [MINERAL OIL PURE, HIGHLY & SEVERELY REFINED]		5	Time Weighted Average (TWA):		IR_OEL
2,2',2"-Nitrilotriethanol 102-71-6 [TRIETHANOLAMINE]		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	
rosin 8050-09-7	aqua (freshwater)		0,002 mg/l				
rosin 8050-09-7	aqua (marine water)		0,0002 mg/l				
rosin 8050-09-7	sediment (freshwater)				0,007 mg/kg		
rosin 8050-09-7	sediment (marine water)				0,001 mg/kg		
rosin 8050-09-7	Soil				0 mg/kg		
rosin 8050-09-7	sewage treatment plant (STP)		1000 mg/l				
rosin 8050-09-7	aqua (intermittent releases)		0,016 mg/l				
White mineral oil (petroleum) 8042-47-5	Air						no hazard identified
Benzotriazole 95-14-7	aqua (freshwater)		0,0194 mg/l				
Benzotriazole 95-14-7	aqua (intermittent releases)		0,158 mg/l				
Benzotriazole 95-14-7	aqua (marine water)		0,0194 mg/l				
Benzotriazole 95-14-7	sewage treatment plant (STP)		0,1 mg/l				
Benzotriazole 95-14-7	sediment (freshwater)				0,22 mg/kg		
Benzotriazole 95-14-7	sediment (marine water)				0,22 mg/kg		
Benzotriazole 95-14-7	Soil				0,03 mg/kg		

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
rosin 8050-09-7	Workers	inhalation	Long term exposure - local effects		10 mg/m3	
rosin 8050-09-7	Workers	dermal	Long term exposure - systemic effects		2,131 mg/kg	
rosin 8050-09-7	General population	dermal	Long term exposure - systemic effects		1,065 mg/kg	
rosin 8050-09-7	General population	oral	Long term exposure - systemic effects		1,065 mg/kg	
White mineral oil (petroleum) 8042-47-5	Workers	Inhalation	Long term exposure - systemic effects		160 mg/m3	no hazard identified
White mineral oil (petroleum) 8042-47-5	Workers	dermal	Long term exposure - systemic effects		220 mg/kg	no hazard identified
White mineral oil (petroleum) 8042-47-5	General population	dermal	Long term exposure - systemic effects		93 mg/kg	no hazard identified
White mineral oil (petroleum) 8042-47-5	General population	Inhalation	Long term exposure - systemic effects		35 mg/m3	no hazard identified
White mineral oil (petroleum) 8042-47-5	General population	oral	Long term exposure - systemic effects		40 mg/kg	no hazard identified
Benzotriazole 95-14-7	General population	oral	Long term exposure - systemic effects		0,54 mg/kg	
Benzotriazole 95-14-7	General population	dermal	Long term exposure - systemic effects		0,54 mg/kg	
Benzotriazole 95-14-7	Workers	dermal	Long term exposure - systemic effects		1,08 mg/kg	
Benzotriazole 95-14-7	General population	inhalation	Long term exposure - systemic effects		9,55 mg/m3	
Benzotriazole 95-14-7	Workers	inhalation	Long term exposure - systemic effects		19 mg/m3	
Benzotriazole 95-14-7	General population	oral	Acute/short term exposure - systemic effects		0,54 mg/kg	
Benzotriazole 95-14-7	General population	inhalation	Long term exposure - local effects		9,55 mg/m3	
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	Workers	inhalation	Long term exposure - local effects		0,308 mg/m3	
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	General population	inhalation	Long term exposure - local effects		0,055 mg/m3	

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:
Ensure adequate ventilation, especially in confined areas.
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.

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

Physical state	liquid
Delivery form	paste
Colour	Amber
Odor	neutral
Melting point	Not determined
Solidification temperature	< 0 °C (< 32 °F)
Initial boiling point	256 °C (492.8 °F)
Flammability	The product is not flammable.
Explosive limits	Not applicable, The product is not flammable.
Flash point	117 °C (242.6 °F)
Auto-ignition temperature	Currently under determination
Decomposition temperature	Currently under determination
pH	Not applicable, Product is non-soluble (in water).
Viscosity (kinematic) (40 °C (104 °F);)	> 20,5 mm2/s
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Not miscible or difficult to mix
Partition coefficient: n-octanol/water	Currently under determination
Vapour pressure (20 °C (68 °F))	< 1 hPa
Density (20 °C (68 °F))	1,0 g/cm3 no method
Relative vapour density: (20 °C)	> 1
Particle characteristics	Currently under determination

9.2. Other information
Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity
Strong oxidizing agents.

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
See section reactivity

10.4. Conditions to avoid
Avoid contact with acids and oxidizing agents.
No decomposition if used according to specifications.

10.5. Incompatible materials
See section reactivity.

10.6. Hazardous decomposition products
Thermal decomposition can lead to release of irritating gases and vapors.
See section 5.

SECTION 11: Toxicological information

General toxicological information:
Prolonged or repeated contact may cause eye irritation.

1.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

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
rosin 8050-09-7	LD50	2.800 mg/kg	rat	not specified
Modified rosin 144413-22-9	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
White mineral oil (petroleum) 8042-47-5	LD50	> 5.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
benzotriazole 95-14-7	LD50	500 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	LD0	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	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
rosin 8050-09-7	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Modified rosin 144413-22-9	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
White mineral oil (petroleum) 8042-47-5	LD50	> 2.000 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
benzotriazole 95-14-7	LD50	> 2.000 mg/kg	rabbit	not specified

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
White mineral oil (petroleum) 8042-47-5	LC50	> 5 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	LC0	> 5,05 mg/l	dust	4 h	rat	OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method)

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
rosin 8050-09-7	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Modified rosin 144413-22-9	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
White mineral oil (petroleum) 8042-47-5	not irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
benzotriazole 95-14-7	not 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
rosin 8050-09-7	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Modified rosin 144413-22-9	moderately irritating	24 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
White mineral oil (petroleum) 8042-47-5	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
benzotriazole 95-14-7	irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

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
Modified rosin 144413-22-9	not sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
White mineral oil (petroleum) 8042-47-5	not sensitising	Buehler test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
benzotriazole 95-14-7	not sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	Sensitizing	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)

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
rosin 8050-09-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Modified rosin 144413-22-9	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Modified rosin 144413-22-9	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
White mineral oil (petroleum) 8042-47-5	negative	bacterial reverse mutation assay (e.g Ames test)	with		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
White mineral oil (petroleum) 8042-47-5	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
benzotriazole 95-14-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
benzotriazole 95-14-7	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
White mineral oil (petroleum) 8042-47-5	NOAEL P >= 2.000 mg/kg NOAEL F1 >= 2.000 mg/kg	one-generation study	dermal	rat	OECD Guideline 415 (One-Generation Reproduction Toxicity Study)
benzotriazole 95-14-7	NOAEL P > 200 mg/kg	screening	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
Modified rosin 144413-22-9	NOAEL 150 mg/kg	oral: gavage	28 d daily	rat	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
White mineral oil (petroleum) 8042-47-5	NOAEL >= 1.600 mg/kg	oral: feed	90 d daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Aspiration hazard:

The mixture is classified based on Viscosity data.

Hazardous substances CAS-No.	Viscosity (kinematic) Value	Temperature	Method	Remarks
White mineral oil (petroleum) 8042-47-5	ca. 3,8 mm2/s	40 °C	not specified	

11.2 Information on other hazards

not applicable

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
rosin 8050-09-7	LC50	Toxicity > Water solubility	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Modified rosin 144413-22-9	LC50	Toxicity > Water solubility	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
White mineral oil (petroleum) 8042-47-5	LL50	> 100 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
benzotriazole 95-14-7	LC50	180 mg/l	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	LL50	Toxicity > Water solubility	96 h	Oncorhynchus mykiss	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
rosin 8050-09-7	EL50	Toxicity > Water solubility	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Modified rosin 144413-22-9	EC50	Toxicity > Water solubility	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
White mineral oil (petroleum) 8042-47-5	EL50	> 100 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
benzotriazole 95-14-7	EC50	15,8 mg/l	48 h	other aquatic crustacea:	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	EL50	Toxicity > Water solubility	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
White mineral oil (petroleum) 8042-47-5	NOEL	10 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
benzotriazole 95-14-7	EC10	0,97 mg/l	21 d	Daphnia galeata	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
rosin 8050-09-7	EL50	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
rosin 8050-09-7	NOELR	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Modified rosin 144413-22-9	EC50	Toxicity > Water solubility	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Modified rosin 144413-22-9	NOEC	Toxicity > Water solubility	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
White mineral oil (petroleum) 8042-47-5	NOELR	100 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
benzotriazole 95-14-7	EC10	1,18 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
benzotriazole 95-14-7	EC50	75 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	EL50	Toxicity > Water solubility	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
rosin 8050-09-7	EC20	Toxicity > Water solubility	3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Modified rosin 144413-22-9	NOEC	Toxicity > Water solubility	3 h	activated sludge	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
White mineral oil (petroleum) 8042-47-5	IC50	> 100 mg/l	93 d	other:	other guideline:
benzotriazole 95-14-7	EC 50	1.060 mg/l	3 h		OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability

The product is not biodegradable.

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
rosin 8050-09-7	readily biodegradable	aerobic	71 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Modified rosin 144413-22-9	not readily biodegradable.	aerobic	25 %	28 day	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
White mineral oil (petroleum) 8042-47-5	not readily biodegradable.	aerobic	31,3 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
benzotriazole 95-14-7	not readily biodegradable.	aerobic	10 %	28 d	ISO 10708 (BODIS-Test)
benzotriazole 95-14-7	not inherently biodegradable	aerobic	0,8 %	30 d	OECD Guideline 302 A (Inherent Biodegradability: Modified SCAS Test)
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	not readily biodegradable.	aerobic	22 %	28 day	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)

12.3. Bioaccumulative potential

No data available.

No substance data available.

12.4. Mobility in soil

Cured adhesives are immobile.

Hazardous substances CAS-No.	LogPow	Temperature	Method
rosin 8050-09-7	> 3 - 6,2		OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Modified rosin 144413-22-9	> 6		EU Method A.8 (Partition Coefficient)
White mineral oil (petroleum) 8042-47-5	> 4		EU Method A.8 (Partition Coefficient)
benzotriazole 95-14-7	1,34	22,7 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	> 5,86		OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
rosin 8050-09-7	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
White mineral oil (petroleum) 8042-47-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
benzotriazole 95-14-7	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Octadecanoic acid, 12-hydroxy-, reaction products with ethylenediamine 100545-48-0	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:
Waste incineration with the approval of the responsible local authority.

Disposal of uncleaned packages:
Use packages for recycling only when totally empty.
Packaging that cannot be cleaned are to be disposed of in the same manner as the product.

Waste code

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.
08 04 09* waste adhesives and sealants containing organic solvents and other dangerous substances

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. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
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 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

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:

H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.
H413 May cause long lasting harmful effects to aquatic life.

ED:	Substance identified as having endocrine disrupting properties
EU OEL:	Substance with a Union workplace exposure limit
EU EXPLD 1:	Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD 2	Substance listed in Annex II, Reg (EC) No. 2019/1148
SVHC:	Substance of very high concern (REACH Candidate List)
PBT:	Substance fulfilling persistent, bioaccumulative and toxic criteria
PBT/vPvB:	Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria
vPvB:	Substance fulfilling very persistent and very bioaccumulative criteria

Further information:

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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.

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