



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

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LOCTITE RA 10 SN62BAS86 10K known as SN62RA10BAS86

SDS No. : 175645
V007.1

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

1.1. Product identifier

LOCTITE RA 10 SN62BAS86 10K known as SN62RA10BAS86

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

Intended use:
Solder Paste

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

SDSinfo.Adhesive@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.	
Toxic to reproduction	Category 1A
H360FD May damage fertility. May damage the unborn child.	
Effects on or via lactation	
H362 May cause harm to breast-fed children.	
Specific target organ toxicity - repeated exposure	Category 1
H372 Causes damage to organs (Blood, Kidney, Central Nervous system) through prolonged or repeated exposure (inhalation-dust, oral)	
Acute hazards to the aquatic environment	Category 1
H400 Very toxic to aquatic life.	
Chronic hazards to the aquatic environment	Category 1
H410 Very toxic to aquatic life with long lasting effects.	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:**Contains**

Lead

rosin

Signal word:

Danger

Hazard statement:

H317 May cause an allergic skin reaction.

H360FD May damage fertility. May damage the unborn child.

H362 May cause harm to breast-fed children.

H372 Causes damage to organs (Blood, Kidney, Central Nervous system) through prolonged or repeated exposure (inhalation-dust, oral)

H410 Very toxic to aquatic life with long lasting effects.

Supplemental information

Restricted to professional users.

**Precautionary statement:
Prevention**

P201 Obtain special instructions before use.

P261 Avoid breathing fume.

P263 Avoid contact during pregnancy and while nursing.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing.

**Precautionary statement:
Response**

P308+P313 IF exposed or concerned: Get medical advice/attention.

P333+P313 If skin irritation or rash occurs: 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).

This product contains modified rosin.

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

Do not heat above 500 °C

Contains lead which may harm your health. Lead can cause birth defects and other reproductive harm.

Following substances are present in a concentration \geq the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in a concentration \geq the concentration limit for depiction in Section 3 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
Tin 7440-31-5 231-141-8 01-2119486474-28	50- 100 %			EU OEL
Lead 7439-92-1 231-100-4 01-2119510714-47	25- 50 %	Aquatic Chronic 1, H410 Aquatic Acute 1, H400 STOT RE 1, Inhalation, H372 STOT RE 1, Oral, H372 Repr. 1A, H360FD Lact. H362	Repr. 1A; H360D; C >= 0,03 % ===== M acute = 1 M chronic = 10	SVHC
rosin 8050-09-7 232-475-7 01-2119480418-32	5- < 10 %	Skin Sens. 1, H317		
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4 231-131-3 01-2119555669-21	1- < 5 %	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M acute = 10 M chronic = 10	EU OEL

**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:

Do not induce vomiting.

Seek medical advice.

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

Chronic overexposure to lead may result in damage to the blood forming, nervous, urinary and reproductive systems. Severe lead toxicity will cause sterility, abortion and neonatal mortality and morbidity.

Prolonged or repeated skin contact with silver and its salts may cause a blue-gray discoloration of the skin and mucous membranes that is irreversible (Argyria).

INGESTION: Nausea, vomiting, diarrhea, abdominal pain.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

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:**

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

High temperatures may produce heavy metal dust, fumes or vapours.

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**

Avoid contact with skin and eyes.

Wear protective equipment.

Ensure adequate ventilation.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Dispose of contaminated material as waste according to Section 13.

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**

Avoid skin and eye contact.

See advice in section 8

Extraction is necessary to remove fumes evolved during reflow.

When using do not eat, drink or smoke.

Wash hands before breaks and immediately after handling the product.

Avoid breathing fumes given out during soldering.

Do not heat above 500 °C

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.

Refer to Technical Data Sheet

7.3. Specific end use(s)

Solder Paste

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
Lead 7439-92-1 [LEAD AND LEAD COMPOUNDS, OTHER THAN LEAD ALKYL (AS PB)]		0,15	Time Weighted Average (TWA):		EH40 WEL
Lead 7439-92-1 [INORGANIC LEAD AND ITS COMPOUNDS]		0,15	Time Weighted Average (TWA):		EU_OEL
Lead 7439-92-1 [LEAD]		0,075	TWA (40 h) air exposure limit for medical surveillance:		EU_OEL_II
Lead 7439-92-1 [LEAD]			Biological Limit Value:		EU_OEL_II
Lead 7439-92-1 [LEAD]			Biological Limit Value for medical surveillance:		EU_OEL_II
Lead 7439-92-1 [Inorganic lead and its compounds]		0,15	Time Weighted Average (TWA):		EU OELIII
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
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
Propane-1,2-diol 57-55-6 [PROPANE-1,2-DIOL, PARTICULATES]		10	Time Weighted Average (TWA):		EH40 WEL
Propane-1,2-diol 57-55-6 [PROPANE-1,2-DIOL, TOTAL VAPOUR AND PARTICULATES]	150	474	Time Weighted Average (TWA):		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
Tin 7440-31-5 [TIN (INORGANIC COMPOUNDS AS SN)]		2	Time Weighted Average (TWA):	Indicative	ECTLV
Tin 7440-31-5 [METAL TIN]		2	Time Weighted Average (TWA):	Indicative OELV	IR_OEL
Lead 7439-92-1 [LEAD AND ITS COMPOUNDS (EXCEPT TETRAETHYL LEAD)]		0,15	Time Weighted Average (TWA):	Binding OELV	IR_OEL
Lead 7439-92-1 [INORGANIC LEAD AND ITS COMPOUNDS]		0,15	Time Weighted Average (TWA):		EU_OEL

Lead 7439-92-1 [LEAD]		0,075	TWA (40 h) air exposure limit for medical surveillance:		EU_OEL_II
Lead 7439-92-1 [LEAD]			Biological Limit Value:		EU_OEL_II
Lead 7439-92-1 [LEAD]			Biological Limit Value for medical surveillance:		EU_OEL_II
Lead 7439-92-1 [Inorganic lead and its compounds]		0,15	Time Weighted Average (TWA):		EU OELIII
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
Silver 7440-22-4 [SILVER (METALLIC)]		0,1	Time Weighted Average (TWA):	Indicative OELV	IR_OEL
Silver 7440-22-4 [SILVER, METALLIC]		0,1	Time Weighted Average (TWA):	Indicative	ECLTV
Propane-1,2-diol 57-55-6 [PROPANE-1,2-DIOL]		10	Time Weighted Average (TWA):		IR_OEL
Propane-1,2-diol 57-55-6 [PROPANE-1,2-DIOL]	150	470	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	
Tin 7440-31-5	aqua (freshwater)						no hazard identified
Tin 7440-31-5	aqua (marine water)						no hazard identified
Tin 7440-31-5	sewage treatment plant (STP)						no hazard identified
Tin 7440-31-5	sediment (freshwater)						no hazard identified
Tin 7440-31-5	sediment (marine water)						no hazard identified
Tin 7440-31-5	Air						no hazard identified
Tin 7440-31-5	Soil						no hazard identified
Tin 7440-31-5	Predator						no potential for bioaccumulation
Lead 7439-92-1	aqua (freshwater)		0,0024 mg/l				
Lead 7439-92-1	aqua (marine water)		0,0033 mg/l				
Lead 7439-92-1	sewage treatment plant (STP)		0,1 mg/l				
Lead 7439-92-1	sediment (freshwater)				186 mg/kg		
Lead 7439-92-1	sediment (marine water)				168 mg/kg		
Lead 7439-92-1	Soil				212 mg/kg		
Lead 7439-92-1	oral				10,9 mg/kg		
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				
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	aqua (freshwater)		0,00004 mg/l				
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	aqua (marine water)		0,00086 mg/l				
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	sewage treatment plant (STP)		0,025 mg/l				
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	sediment (freshwater)				438,13 mg/kg		
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	sediment (marine water)				438,13 mg/kg		
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Air						no hazard identified
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Soil				1,41 mg/kg		

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Tin 7440-31-5	General population	dermal	Long term exposure - systemic effects		80 mg/kg	no hazard identified
Tin 7440-31-5	Workers	inhalation	Long term exposure - systemic effects		71 mg/m ³	no hazard identified
Tin 7440-31-5	Workers	dermal	Long term exposure - systemic effects		10 mg/kg	no hazard identified
Tin 7440-31-5	General population	inhalation	Long term exposure - systemic effects		17 mg/m ³	no hazard identified
Tin 7440-31-5	General population	oral	Long term exposure - systemic effects		5 mg/kg	no hazard identified
rosin 8050-09-7	Workers	inhalation	Long term exposure - local effects		10 mg/m ³	
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	
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Workers	inhalation	Long term exposure - systemic effects		0,1 mg/m ³	no hazard identified
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	General population	inhalation	Long term exposure - systemic effects		0,04 mg/m ³	no hazard identified
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	General population	oral	Long term exposure - systemic effects		1,2 mg/kg	no hazard identified

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]	Lead	Blood			EU HCA2		
Lead 7439-92-1 [LEAD]	Lead	Blood			EU HCA2		
Lead 7439-92-1 [LEAD]	Lead	Blood	Sampling time: End of work week.		IR BELD		

8.2. Exposure controls:

Engineering controls:

Ensure adequate ventilation, especially in confined areas.

Extraction is necessary to remove fumes evolved during reflow.

Respiratory protection:

Use only in well-ventilated areas.

In case of insufficient ventilation, wear suitable respiratory equipment.

Suitable respiratory protection:

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; \geq 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; \geq 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

Delivery form	paste
Colour	grey
Odor	mild
Physical state	liquid
Melting point	179,0 °C (354.2 °F)
Initial boiling point	Not determined
Flammability	Currently under determination
Explosive limits	Currently under determination
Flash point	> 100 °C (> 212 °F)
Auto-ignition temperature	186 °C (366.8 °F)Dummy
Decomposition temperature	Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use
pH	Not applicable
Viscosity (kinematic)	Currently under determination
Solubility (qualitative)	Insoluble
(20 °C (68 °F); Solvent: Water)	
Partition coefficient: n-octanol/water	Not applicable
	Mixture
Vapour pressure	Not determined
Density	4,15 g/cm ³ None
(20 °C (68 °F))	
Relative vapour density:	Heavier than air
(20 °C)	
Particle characteristics	Not applicable
	Product is a liquid

9.2. Other information

Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with strong oxidants.

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

Stable under normal conditions of storage and use.

Solder alloy will react with concentrated nitric acid to produce toxic fumes of nitrogen oxides.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

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

Metallic oxides

SECTION 11: Toxicological information

General toxicological information:

Chronic overexposure to lead may result in damage to the blood forming, nervous, urinary and reproductive systems. Severe lead toxicity will cause sterility, abortion and neonatal mortality and morbidity.

11.1 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
Tin 7440-31-5	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
Lead 7439-92-1	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
rosin 8050-09-7	LD50	2.800 mg/kg	rat	not specified
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	LD50	> 2.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)

Acute dermal toxicity:

Prolonged or repeated skin contact with silver and its salts may cause a blue-gray discoloration of the skin and mucous membranes that is irreversible (Argyria).

Hazardous substances CAS-No.	Value type	Value	Species	Method
Tin 7440-31-5	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Lead 7439-92-1	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
rosin 8050-09-7	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	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
Tin 7440-31-5	LC50	> 4,75 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
Lead 7439-92-1	LC50	> 5,05 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Tin 7440-31-5	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Lead 7439-92-1	not 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:

Solder pastes may be abrasive to the eyes and the fumes are irritating.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Tin 7440-31-5	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Lead 7439-92-1	not 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:

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
Lead 7439-92-1	not sensitising	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
Tin 7440-31-5	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Tin 7440-31-5	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Tin 7440-31-5	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
rosin 8050-09-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	negative	in vitro mammalian cell micronucleus test	with and without		OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
Lead 7439-92-1	ambiguous	oral: feed		mouse	not specified
Lead 7439-92-1	negative	inhalation		mouse	not specified

Carcinogenicity

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
Lead 7439-92-1	carcinogenic	oral: feed	2 y daily	rat	male	not specified
Lead 7439-92-1	not carcinogenic	inhalation	1 y	rat	male	not specified

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
Tin 7440-31-5	NOAEL P > 1.000 mg/kg NOAEL F1 > 1.000 mg/kg	screening	oral: gavage	rat	OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test)
Lead 7439-92-1	NOAEL P 250 mg/L	fertility	oral: drinking water	rat	not specified

STOT-single exposure:

No data available.

STOT-repeated exposure:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
Tin 7440-31-5	NOAEL > 1.000 mg/kg	oral: gavage	28 days daily	rat	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)

Aspiration hazard:

No data available.

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.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Tin 7440-31-5	LC50	Toxicity > Water solubility	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Lead 7439-92-1	LC50	0,0408 mg/l	96 h	Pimephales promelas	other guideline:
Lead 7439-92-1	NOEC	0,009 mg/l		Pimephales promelas	other guideline:
rosin 8050-09-7	LC50	Toxicity > Water solubility	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	LC50	0,0012 mg/l	96 h	Pimephales promelas	other guideline:
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	EC10	0,00019 mg/l	217 d	Salmo trutta	OECD Guideline 210 (fish early lite stage toxicity test)

Toxicity (aquatic invertebrates):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Lead 7439-92-1	EC50	0,026 mg/l		Ceriodaphnia dubia	other guideline:
rosin 8050-09-7	EL50	Toxicity > Water solubility	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	EC50	0,00022 mg/l	48 h	Daphnia magna	other guideline:

Chronic toxicity (aquatic invertebrates):

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Tin 7440-31-5	NOEC	Toxicity > Water solubility	7 d	Ceriodaphnia dubia	other guideline:
Lead 7439-92-1	NOEC	0,0017 mg/l		Ceriodaphnia dubia	other guideline:
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	NOEC	0,00032 mg/l	21 d	Daphnia magna	EPA OPPTS 850.1300 (Daphnid Chronic Toxicity Test)

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Tin 7440-31-5	EC50	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Tin 7440-31-5	NOEC	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Lead 7439-92-1	EC50	0,0205 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Lead 7439-92-1	EC10	0,0061 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
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)
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	EC10	0,00016 mg/l	15 d	other:	other guideline:

Toxicity (microorganisms):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Tin 7440-31-5	EC50	Toxicity > Water solubility	3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
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)

12.2. Persistence and degradability

The table below presents the data of the classified substances present in the mixture.

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)

12.3. Bioaccumulative potential

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Bioconcentration factor (BCF)	Exposure time	Temperature	Species	Method
Lead 7439-92-1	1.553				not specified
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	70	42 d	20 °C	Cyprinus carpio	other guideline:

12.4. Mobility in soil

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	LogPow	Temperature	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

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	PBT / vPvB
Tin 7440-31-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Lead 7439-92-1	According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances.
rosin 8050-09-7	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	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:

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

Dispose of in accordance with local and national regulations.

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

Disposal of uncleaned packages:

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

Dispose of as unused 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.

06 04 05 - wastes containing other heavy metals

SECTION 14: Transport information
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14.1. UN number or ID number

ADR	3082
RID	3082
ADN	3082
IMDG	3082
IATA	3082

14.2. UN proper shipping name

ADR	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver,Lead)
RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver,Lead)
ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver,Lead)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver,Lead)
IATA	Environmentally hazardous substance, liquid, n.o.s. (Silver,Lead)

14.3. Transport hazard class(es)

ADR	9
RID	9
ADN	9
IMDG	9
IATA	9

14.4. Packing group

ADR	III
RID	III
ADN	III
IMDG	III
IATA	III

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	Marine pollutant
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable Tunnelcode:
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

The transport classifications in this section apply generally to packed and bulk goods alike. For containers with a net volume of no more than 5 L for liquid substances or a net mass of no more than 5 kg for solid substances per individual or inner package, the exemptions SP 375 (ADR), A197 (IATA), 2.10.2.7 (IMDG) may be applied, which can result in a deviation from the transport classification for packed goods.

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):	Lead CAS 7439-92-1
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	<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.
 H360FD May damage fertility. May damage the unborn child.
 H362 May cause harm to breast-fed children.
 H372 Causes damage to organs through prolonged or repeated exposure.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.

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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