



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

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LOCTITE MSC 1000S known as SPOT-ON SOLDER MASK 250 ML

SDS No. : 153925
V008.3

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

1.1. Product identifier

LOCTITE MSC 1000S known as SPOT-ON SOLDER MASK 250 ML

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

Intended use:
Loddemaske

1.3. Details of the supplier of the safety data sheet

Henkel Ltd
Adhesives
Wood Lane End
HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 (1442) 278000

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 8701 906777 - For further general health & safety, technical and practical advice on this product, please call +44 (0) 1606 593933 or write to: Technical Services; Henkel Limited; Road 5; Winsford Industrial Estate; Winsford; Cheshire; CW7 3QY- Email: technical.services@henkel.co.uk

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Respiratory sensitizer	Category 1
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Chronic hazards to the aquatic environment	Category 3
H412 Harmful to aquatic life with long lasting effects.	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains

Rubber, natural

Zinc diethyldithiocarbamate

Signal word:

Danger

Hazard statement:

H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H412 Harmful to aquatic life with long lasting effects.

Supplemental information

Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

**Precautionary statement:
Prevention**

P261 Avoid breathing vapors.
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.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

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.

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
Rubber, natural 9006-04-6 232-689-0	25- 50 %	Resp. Sens. 1, H334 Skin Sens. 1, H317	oral:ATE = 2.043 mg/kg	
titanium dioxide 1317-70-0 215-280-1 01-2119489379-17	1- < 5 %	Carc. 2, Inhalation, H351		
Zinc diethyldithiocarbamate 14324-55-1 238-270-9 01-2119683928-16	0,1- < 1 %	STOT RE 2, H373 Acute Tox. 4, Oral, H302 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 1, H410 Aquatic Acute 1, H400	M acute = 1 M chronic = 1	
ammonia, aqueous solution 1336-21-6 215-647-6 01-2119488876-14	0,1- < 0,25 %	Aquatic Acute 1, H400 Aquatic Chronic 2, H411 Skin Corr. 1B, H314 Acute Tox. 4, Inhalation, H332 STOT SE 3, H335	STOT SE 3; H335; C >= 5 % ===== M acute = 1 ===== inhalation:	EU OEL
thiram 137-26-8 205-286-2 01-2119492301-45	0,01- < 0,025 % (100 ppm- < 250 ppm)	STOT RE 2, H373 Acute Tox. 4, Oral, H302 Acute Tox. 4, Inhalation, H332 Skin Irrit. 2, H315 Aquatic Chronic 1, H410 Aquatic Acute 1, H400 Skin Sens. 1, H317 Eye Irrit. 2, H319	M acute = 10 M chronic = 10	

If no ATE values are displayed, please refer to LD/LC50 values in Section 11.

For full text of the H - statements and other abbreviations see section 16 "Other information".

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

SKIN: Rash, Urticaria.

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

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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.

Do not use water on fires where molten metal is present.

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.

Ensure adequate ventilation.

Wear protective equipment.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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.

Scrape up spilled material and place in a closed container for disposal.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid skin and eye contact.

See advice in section 8

Extraction is necessary to remove fumes evolved during reflow.

Wash hands before breaks and immediately after handling the product.

When using do not eat, drink or smoke.

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 place in closed original container.
- Refer to Technical Data Sheet.

7.3. Specific end use(s)

Loddemaske

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
Anatase (TiO ₂) 1317-70-0 [TITANIUM DIOXIDE, RESPIRABLE]		4	Time Weighted Average (TWA):		EH40 WEL
Anatase (TiO ₂) 1317-70-0 [TITANIUM DIOXIDE, TOTAL INHALABLE]		10	Time Weighted Average (TWA):		EH40 WEL
Anatase (TiO ₂) 1317-70-0 [Dust, respirable dust]		4	Time Weighted Average (TWA):		EH40 WEL
Anatase (TiO ₂) 1317-70-0 [Dust, inhalable dust]		10	Time Weighted Average (TWA):		EH40 WEL
Ammonia, aqueous solution 1336-21-6 [Ammonia, anhydrous]	35	25	Short Term Exposure Limit (STEL):	15 minutes	EH40 WEL
Ammonia, aqueous solution 1336-21-6 [Ammonia, anhydrous]	25	18	Time Weighted Average (TWA):		EH40 WEL
Ammonia, aqueous solution 1336-21-6 [AMMONIA, ANHYDROUS]	50	36	Short Term Exposure Limit (STEL):	Indicative	ECTLV
Ammonia, aqueous solution 1336-21-6 [AMMONIA, ANHYDROUS]	20	14	Time Weighted Average (TWA):	Indicative	ECTLV

Occupational Exposure LimitsValid for
Ireland

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Rubber, natural 9006-04-6 [NATURAL RUBBER LATEX (AS INHALABLE ALLERGENIC PROTEINS)]		0,0001	Time Weighted Average (TWA):		IR_OEL
Rubber, natural 9006-04-6 [NATURAL RUBBER LATEX]		0,0001	Time Weighted Average (TWA):		IR_OEL
Anatase (TiO ₂) 1317-70-0 [DUSTS NON-SPECIFIC]		4	Time Weighted Average (TWA):		IR_OEL
Anatase (TiO ₂) 1317-70-0 [DUSTS NON-SPECIFIC]		10	Time Weighted Average (TWA):		IR_OEL
Anatase (TiO ₂) 1317-70-0 [Titanium dioxide]		4	Time Weighted Average (TWA):		IR_OEL
Anatase (TiO ₂) 1317-70-0 [Titanium dioxide]		10	Time Weighted Average (TWA):		IR_OEL
Ammonia, aqueous solution 1336-21-6 [AMMONIA, ANHYDROUS]	50	36	Short Term Exposure Limit (STEL):	15 minutes Indicative OELV	IR_OEL
Ammonia, aqueous solution 1336-21-6 [AMMONIA, ANHYDROUS]	20	14	Time Weighted Average (TWA):	Indicative OELV	IR_OEL
Ammonia, aqueous solution	50	36	Short Term Exposure	Indicative	ECTLV

1336-21-6 [AMMONIA, ANHYDROUS]			Limit (STEL):		
Ammonia, aqueous solution 1336-21-6 [AMMONIA, ANHYDROUS]	20	14	Time Weighted Average (TWA):	Indicative	ECTLV
Thiram 137-26-8 [THIRAM (ISO)]		0,05	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	
Anatase (TiO ₂) 1317-70-0	aqua (freshwater)		0,184 mg/l				
Anatase (TiO ₂) 1317-70-0	aqua (marine water)		0,0184 mg/l				
Anatase (TiO ₂) 1317-70-0	sediment (freshwater)				1000 mg/kg		
Anatase (TiO ₂) 1317-70-0	sediment (marine water)				100 mg/kg		
Anatase (TiO ₂) 1317-70-0	Soil				100 mg/kg		
Anatase (TiO ₂) 1317-70-0	Sewage treatment plant		100 mg/l				
Zinc bis(diethyldithiocarbamate) 14324-55-1	sewage treatment plant (STP)		14,3 mg/l				
Zinc bis(diethyldithiocarbamate) 14324-55-1	aqua (freshwater)		0,00032 mg/l				
Zinc bis(diethyldithiocarbamate) 14324-55-1	aqua (marine water)		0,000032 mg/l				
Zinc bis(diethyldithiocarbamate) 14324-55-1	sediment (freshwater)				0,473 mg/kg		
Zinc bis(diethyldithiocarbamate) 14324-55-1	Soil				0,0944 mg/kg		
Zinc bis(diethyldithiocarbamate) 14324-55-1	oral				36 mg/kg		
Zinc bis(diethyldithiocarbamate) 14324-55-1	sediment (marine water)				0,0473 mg/kg		
Zinc bis(diethyldithiocarbamate) 14324-55-1	aqua (intermittent releases)		0,0023 mg/l				
ammonia, aqueous solution 1336-21-6	aqua (freshwater)		0,001 mg/l				
ammonia, aqueous solution 1336-21-6	aqua (marine water)		0,001 mg/l				
ammonia, aqueous solution 1336-21-6	aqua (intermittent releases)		0,0068 mg/l				
thiram 137-26-8	aqua (freshwater)		0,00046 mg/l				
thiram 137-26-8	sediment (freshwater)				0,105 mg/kg		
thiram 137-26-8	aqua (marine water)		0,000046 mg/l				
thiram 137-26-8	sediment (marine water)				0,011 mg/kg		
thiram 137-26-8	Soil				0,147 mg/kg		
thiram 137-26-8	sewage treatment plant (STP)		0,06 mg/l				
thiram 137-26-8	oral				16,67 mg/kg		
thiram 137-26-8	Freshwater - intermittent		0,00046 mg/l				
thiram 137-26-8	Marine water - intermittent		0,00046 mg/l				

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Anatase (TiO ₂) 1317-70-0	Workers	Inhalation	Long term exposure - local effects		10,000000 mg/m ³	
Anatase (TiO ₂) 1317-70-0	General population	oral	Long term exposure - systemic effects		700,000000 mg/kg	
Zinc bis(diethyldithiocarbamate) 14324-55-1	Workers	dermal	Long term exposure - systemic effects		500 mg/kg	
Zinc bis(diethyldithiocarbamate) 14324-55-1	Workers	inhalation	Acute/short term exposure - systemic effects		12 mg/m ³	
Zinc bis(diethyldithiocarbamate) 14324-55-1	Workers	inhalation	Long term exposure - systemic effects		4 mg/m ³	
ammonia, aqueous solution 1336-21-6	Workers	inhalation	Long term exposure - systemic effects		47,6 mg/m ³	
ammonia, aqueous solution 1336-21-6	Workers	inhalation	Acute/short term exposure - systemic effects		47,6 mg/m ³	
ammonia, aqueous solution 1336-21-6	Workers	inhalation	Long term exposure - local effects		14 mg/m ³	
ammonia, aqueous solution 1336-21-6	Workers	Inhalation	Acute/short term exposure - local effects		36 mg/m ³	
ammonia, aqueous solution 1336-21-6	Workers	dermal	Long term exposure - systemic effects		6,8 mg/kg	
ammonia, aqueous solution 1336-21-6	Workers	dermal	Acute/short term exposure - systemic effects		6,8 mg/kg	
ammonia, aqueous solution 1336-21-6	General population	inhalation	Long term exposure - systemic effects		23,8 mg/m ³	
ammonia, aqueous solution 1336-21-6	General population	inhalation	Acute/short term exposure - systemic effects		23,8 mg/m ³	
ammonia, aqueous solution 1336-21-6	General population	inhalation	Long term exposure - local effects		2,8 mg/m ³	
ammonia, aqueous solution 1336-21-6	General population	inhalation	Acute/short term exposure - local effects		7,2 mg/m ³	
ammonia, aqueous solution 1336-21-6	General population	dermal	Long term exposure - systemic effects		6,8 mg/kg	
ammonia, aqueous solution 1336-21-6	General population	dermal	Acute/short term exposure - systemic effects		6,8 mg/kg	
ammonia, aqueous solution 1336-21-6	General population	oral	Long term exposure - systemic effects		6,8 mg/kg	
ammonia, aqueous solution 1336-21-6	General population	oral	Acute/short term exposure - systemic effects		6,8 mg/kg	
thiram 137-26-8	Workers	inhalation	Long term exposure - systemic effects		0,235 mg/m ³	
thiram 137-26-8	Workers	inhalation	Acute/short term exposure - systemic effects			
thiram 137-26-8	Workers	inhalation	Acute/short term exposure - local effects			
thiram 137-26-8	Workers	dermal	Long term exposure -		1,667 mg/kg	

			systemic effects			
thiram 137-26-8	Workers	dermal	Long term exposure - local effects			
thiram 137-26-8	Workers	dermal	Acute/short term exposure - local effects			
thiram 137-26-8	General population	inhalation	Long term exposure - systemic effects		0,042 mg/m3	
thiram 137-26-8	General population	inhalation	Acute/short term exposure - systemic effects			
thiram 137-26-8	General population	inhalation	Acute/short term exposure - local effects			
thiram 137-26-8	General population	dermal	Long term exposure - systemic effects		0,833 mg/kg	
thiram 137-26-8	General population	dermal	Long term exposure - local effects			
thiram 137-26-8	General population	dermal	Acute/short term exposure - local effects			
thiram 137-26-8	General population	oral	Long term exposure - systemic effects		0,012 mg/kg	
thiram 137-26-8	General population	oral	Acute/short term exposure - systemic effects			

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/extraction.

Ensure adequate ventilation, especially in confined areas.

Respiratory protection:

Ensure adequate ventilation.

An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area

In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387).

This recommendation should be matched to local conditions.

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:

This product releases chlorine gas on mixing of part A & B that must be managed through ventilation or PPE controls.

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	white
Odor	ammoniacal
Physical state	liquid
Melting point	0 °C (32 °F)
Initial boiling point	100 °C (212 °F)
Flammability	Not applicable
Explosive limits	Currently under determination
Flash point	Does not flash.
Auto-ignition temperature	Currently under determination
Decomposition temperature	Currently under determination
pH	7,00 - 9,00 None
(20 °C (68 °F))	
Viscosity (kinematic)	Currently under determination
Solubility (qualitative)	Miscible
(Solvent: Water)	
Partition coefficient: n-octanol/water	Not applicable
	Mixture
Vapour pressure	Not determined
Density	0,910 - 0,990 g/cm3 None
(25,0 °C (77 °F))	
Relative vapour density:	Not determined
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**

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.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

None if used for intended purpose.

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

Metallic oxides

SECTION 11: Toxicological information**General toxicological information:**

Fumes emitted during soldering may irritate the skin.

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
Rubber, natural 9006-04-6	LD50	2.043 - 2.210 mg/kg	rat	not specified
Rubber, natural 9006-04-6	Acute toxicity estimate (ATE)	2.043 mg/kg		Expert judgement
titanium dioxide 1317-70-0	LD50	> 25.000 mg/kg	rat	not specified
Zinc diethyldithiocarbamate 14324-55-1	LD50	1.960 mg/kg	mouse	not specified
thiram 137-26-8	LD50	1.800 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
Rubber, natural 9006-04-6	LD50	> 4.000 mg/kg	not specified	not specified
Zinc diethyldithiocarbamate 14324-55-1	LD50	> 2.000 mg/kg	rabbit	not specified
thiram 137-26-8	LD50	> 2.000 mg/kg	rabbit	EPA OPP 81-2 (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
ammonia, aqueous solution 1336-21-6	Acute toxicity estimate (ATE)	6570 ppm		4 h		Expert judgement
thiram 137-26-8	LC50	4,42 mg/l	dust/mist	4 h	rat	EPA OPP 81-3 (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
ammonia, aqueous solution 1336-21-6	corrosive	4 h	rabbit	equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/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
ammonia, aqueous solution 1336-21-6	corrosive			not specified
thiram 137-26-8	irritating		rabbit	EPA OPP 81-4 (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
ammonia, aqueous solution 1336-21-6	not sensitising	not specified	guinea pig	not specified
thiram 137-26-8	sensitising	Split adjuvant test	guinea pig	EPA OPP 81-6 (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
ammonia, aqueous solution 1336-21-6	negative	bacterial reverse mutation assay (e.g Ames test)	not specified		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
thiram 137-26-8	positive	bacterial reverse mutation assay (e.g Ames test)	with and without		EPA OPP 84-2 (Mutagenicity Testing)
thiram 137-26-8	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
thiram 137-26-8	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
ammonia, aqueous solution 1336-21-6	negative	intraperitoneal		mouse	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
thiram 137-26-8	negative	oral: gavage		mouse	EU Method B.24 (Mouse Spot Test)
thiram 137-26-8	negative	oral: gavage		mouse	OECD Guideline 483 (Mammalian Spermatogonial Chromosome Aberration Test)
thiram 137-26-8	negative	intraperitoneal		mouse	EPA OPP 84-2 (Mutagenicity Testing)

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
ammonia, aqueous solution 1336-21-6	not carcinogenic	oral: feed	104 w daily	rat		OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

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
ammonia, aqueous solution 1336-21-6	NOAEL P 408 mg/kg	screening	oral: unspecified	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the 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
thiram 137-26-8	NOAEL 3,5 - 4 mg/kg	oral: feed	90 d daily	rat	EU Method B.26 (Sub- Chronic Oral Toxicity Test: Repeated Dose 90- Day Oral Toxicity Study 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
Rubber, natural 9006-04-6	LC50	> 10.000 mg/l	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)
titanium dioxide 1317-70-0	LC50	> 1.000 mg/l	96 h	Fundulus heteroclitus	OECD Guideline 203 (Fish, Acute Toxicity Test)
Zinc diethyldithiocarbamate 14324-55-1	LC50	0,23 mg/l	96 h	Oncorhynchus mykiss	EPA-660 (Methods for Acute Toxicity Tests with Fish, Macroinvertebrates and Amphibians)
Zinc diethyldithiocarbamate 14324-55-1	NOEC	0,101 mg/l	33 d	Pimephales promelas	OECD Guideline 210 (fish early lite stage toxicity test)
ammonia, aqueous solution 1336-21-6	LC50	0,16 - 1,1 mg/l	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	OECD Guideline 203 (Fish, Acute Toxicity Test)
ammonia, aqueous solution 1336-21-6	NOEC	< 0,048 mg/l	31 d	Channel catfish	OECD Guideline 215 (Fish, Juvenile Growth Test)
thiram 137-26-8	LC50	0,046 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
thiram 137-26-8	NOEC	0,0046 mg/l	33 d	Pimephales promelas	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
titanium dioxide 1317-70-0	EC50	> 1.000 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Zinc diethyldithiocarbamate 14324-55-1	EC50	0,24 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
ammonia, aqueous solution 1336-21-6	EC50	25,4 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
thiram 137-26-8	EC50	0,21 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

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
Zinc diethyldithiocarbamate 14324-55-1	NOEC	0,39 mg/l	21 day	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
ammonia, aqueous solution 1336-21-6	NOEC	0,79 mg/l	96 h	Daphnia magna	EPA OPPTS 850.1300 (Daphnid Chronic Toxicity Test)

thiram 137-26-8	NOEC	0,04 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
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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
Zinc diethyldithiocarbamate 14324-55-1	EC50	1,1 mg/l	96 h	Chlorella pyrenoidosa	OECD Guideline 201 (Alga, Growth Inhibition Test)
ammonia, aqueous solution 1336-21-6	EC50	> 1.000 mg/l	72 h	Skeletonema costatum	ISO 10253 (Water quality)
ammonia, aqueous solution 1336-21-6	NOEC	1.000 mg/l	72 h	Skeletonema costatum	ISO 10253 (Water quality)
thiram 137-26-8	EC50	1 mg/l	96 h	Chlorella pyrenoidosa	OECD Guideline 201 (Alga, Growth Inhibition Test)

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
Rubber, natural 9006-04-6	EC 50	> 10.000 mg/l			OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
titanium dioxide 1317-70-0	EC0	10.000 mg/l	24 h		not specified
thiram 137-26-8	EC0	> 200 mg/l			not specified

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
Zinc diethyldithiocarbamate 14324-55-1	not readily biodegradable.	aerobic	2 %	28 day	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
thiram 137-26-8	not readily biodegradable.	aerobic	20 - 40 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)

12.3. Bioaccumulative potential

No substance data available.
No data available.

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
Zinc diethyldithiocarbamate 14324-55-1	3,11		QSAR (Quantitative Structure Activity Relationship)
ammonia, aqueous solution 1336-21-6	-1,14		EU Method A.8 (Partition Coefficient)
thiram 137-26-8	1,73	20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask 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
titanium dioxide 1317-70-0	According to Annex XIII to Regulation (EC) No 1907/2006, a PBT and vPvB assessment shall not be conducted for inorganic substances.
Zinc diethyldithiocarbamate 14324-55-1	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
ammonia, aqueous solution 1336-21-6	According to Annex XIII to Regulation (EC) No 1907/2006, a PBT and vPvB assessment shall not be conducted for inorganic substances.
thiram 137-26-8	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

06 04 05 - wastes containing other heavy metals

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 or ID 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):	thiram CAS 137-26-8
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
VOC content (2010/75/EC)	< 1 %

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.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 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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