



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

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LOCTITE M 4100 0.4KG E&C

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V005.1

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

1.1. Product identifier

LOCTITE M 4100 0.4KG E&C

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

Intended use:

PTF ink

1.3. Details of the supplier of the safety data sheet

Henkel AG & Co. KGaA

Henkelstr. 67

40589 Düsseldorf

Germany

Phone: +49 211 797 0

ua-productsafety.de@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

The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Skin irritation	Category 2
H315 Causes skin irritation.	
Serious eye irritation	Category 2
H319 Causes serious eye irritation.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Germ cell mutagenicity	Category 2
H341 Suspected of causing genetic defects.	
Specific target organ toxicity - single exposure	Category 2
H371 May cause damage to organs.	
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**

Phenol-formaldehyde polymer

methanol

phenol

Formaldehyde

Signal word:

Warning

Hazard statement:

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H341 Suspected of causing genetic defects.

H371 May cause damage to organs.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement:

P260 Do not breathe mist/vapours.

Prevention

P280 Wear protective gloves/eye protection.

2.3. Other hazards

None if used properly.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

Following substances are present in a concentration $\geq 0,1\%$ and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):This mixture does not contain any substances in concentration \geq 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
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4 231-131-3 01-2119555669-21	60- 80 %	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M acute = 10 M chronic = 10	EU OEL
Phenol-formaldehyde polymer 9003-35-4 500-005-2	5- < 10 %	Eye Irrit. 2, H319 STOT SE 3, H335 Skin Sens. 1, H317		
methanol 67-56-1 200-659-6 01-2119433307-44	1- < 5 %	Flam. Liq. 2, H225 Acute Tox. 3, Inhalation, H331 Acute Tox. 3, Dermal, H311 Acute Tox. 3, Oral, H301 STOT SE 1, H370	STOT SE 1; H370; C >= 10 % STOT SE 2; H371; C 3 - < 10 % ===== oral:ATE = 300 mg/kg	EU OEL
phenol 108-95-2 203-632-7 01-2119471329-32	1- < 3 %	Muta. 2, H341 STOT RE 2, H373 Skin Corr. 1B, H314 Acute Tox. 3, Dermal, H311 Acute Tox. 3, Oral, H301 Acute Tox. 3, Inhalation, H331 Aquatic Chronic 2, H411	Skin Corr. 1B; H314; C >= 3 % Skin Irrit. 2; H315; C 1 - < 3 % Eye Irrit. 2; H319; C 1 - < 3 % ===== oral:ATE = 140 mg/kg inhalation:ATE = 1 mg/l;dust/mist	EU OEL
Naphthalene 91-20-3 202-049-5 01-2119561346-37	0,1- < 1 %	Flam. Sol. 2, H228 Acute Tox. 4, Oral, H302 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M acute = 1 M chronic = 1	EU OEL
Formaldehyde 50-00-0 200-001-8 01-2119488953-20	0,02- < 0,1 %	Carc. 1B, H350 Muta. 2, H341 Acute Tox. 3, Dermal, H311 Acute Tox. 3, Inhalation, H331 Acute Tox. 3, Oral, H301 Skin Corr. 1B, H314 Skin Sens. 1, H317	Eye Irrit. 2; H319; C 5 - < 25 % Skin Sens. 1; H317; C >= 0,2 % STOT SE 3; H335; C >= 5 % Skin Corr. 1B; H314; C >= 25 % Skin Irrit. 2; H315; C 5 - < 25 % ===== oral:ATE = 100 mg/kg	

**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:

Fresh air, oxygen supply, warmth; seek specialist medical attention.

Skin contact:

IF ON SKIN: Wash with plenty of soap and water.

In case of adverse health effects seek medical advice.

Eye contact:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

In case of adverse health effects seek medical advice.

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.

SKIN: Redness, inflammation.

EYE: Irritation, conjunctivitis.

4.3. Indication of any immediate medical attention and special treatment needed

See section: Description of first aid measures

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media:**

Carbon dioxide, foam, powder

Fine water spray

Extinguishing media which must not be used for safety reasons:

Water jet (solvent-containing product).

5.2. Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in fires.

5.3. Advice for firefighters

Wear protective equipment.

Wear self-contained breathing apparatus.

Additional information:

Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Avoid contact with skin and eyes.

Danger of slipping on spilled product.

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.

Remove with liquid-absorbing material (sand, peat, sawdust).

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.

Ensure that workrooms are adequately ventilated.

See advice in section 8

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

Hygiene measures:

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke when using this product.

Take off contaminated clothing and wash before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Ensure good ventilation/extraction.

18 °C - 25 °C

7.3. Specific end use(s)

PTF ink

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Germany

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Silver 7440-22-4 [SILVER, METALLIC]		0,1	Time Weighted Average (TWA):	Indicative	ECLTV
Silver 7440-22-4			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Silver 7440-22-4		0,1	Exposure limit(s):	8	TRGS 900
2-(2-Ethoxyethoxy)ethanol 111-90-0			Short Term Exposure Classification:	Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.	TRGS 900
2-(2-Ethoxyethoxy)ethanol 111-90-0	6	35	Exposure limit(s):	2 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Methanol 67-56-1 [METHANOL]	200	260	Time Weighted Average (TWA):	Indicative	ECLTV
Methanol 67-56-1			Skin designation:	Can be absorbed through the skin.	TRGS 900
Methanol 67-56-1			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Methanol 67-56-1	100	130	Exposure limit(s):	2 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Phenol 108-95-2 [PHENOL]	2	8	Time Weighted Average (TWA):	Indicative	ECLTV
Phenol 108-95-2 [PHENOL]	4	16	Short Term Exposure Limit (STEL):	Indicative	ECLTV
Phenol 108-95-2			Skin designation:	Can be absorbed through the skin.	TRGS 900
Phenol 108-95-2	2	8	Exposure limit(s):	2	TRGS 900
Phenol 108-95-2			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Naphthalene 91-20-3 [NAPHTHALENE]	10	50	Time Weighted Average (TWA):	Indicative	ECLTV
Naphthalene 91-20-3 [BENZO(A)PYRENE IN CERTAIN PAH MIXTURES (INHALABLE FRACTION)]			Acceptance concentration (4 x 10 ⁻⁴):		TRGS 910
Naphthalene 91-20-3 [BENZO(A)PYRENE IN CERTAIN PAH MIXTURES (INHALABLE FRACTION)]			Excursion factor:	8 Factor by which the average shift value (SMW) can be exceeded four times per shift during a maximum. period of 15 minutes each.	TRGS 910
Naphthalene 91-20-3 [BENZO(A)PYRENE IN CERTAIN PAH MIXTURES (INHALABLE FRACTION)]			Skin designation:	Can be absorbed through the skin.	TRGS 910
Naphthalene 91-20-3			Tolerance Concentration (4 x 10 ⁻³):		TRGS 910

[BENZO(A)PYRENE IN CERTAIN PAH MIXTURES (INHALABLE FRACTION)]					
Naphthalene 91-20-3			Short Term Exposure Classification:	Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.	TRGS 900
Naphthalene 91-20-3	0,4	2	Exposure limit(s):	4 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Naphthalene 91-20-3			Skin designation:	Can be absorbed through the skin.	TRGS 900
Naphthalene 91-20-3 [POLYCYCLIC AROMATIC HYDROCARBONS MIXTURES]			Skin designation:	Can be absorbed through the skin.	EU OELIII
Formaldehyde 50-00-0 [FORMALDEHYDE]	0,5	0,62	Time Weighted Average (TWA):		EU OELIII
Formaldehyde 50-00-0 [FORMALDEHYDE]	0,3	0,37	Time Weighted Average (TWA):		EU OELIII
Formaldehyde 50-00-0 [FORMALDEHYDE]	0,6		Short Term Exposure Limit (STEL):		EU OELIII
Formaldehyde 50-00-0 [FORMALDEHYDE]		0,74	Short Term Exposure Limit (STEL):		EU OELIII
Formaldehyde 50-00-0	0,3	0,37	Exposure limit(s):	2 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Formaldehyde 50-00-0			Short Term Exposure Classification:	Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.	TRGS 900

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
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		
methanol 67-56-1	aqua (freshwater)						no hazard identified
methanol 67-56-1	sediment (freshwater)						no hazard identified
methanol 67-56-1	aqua (marine water)						no hazard identified
methanol 67-56-1	Soil						no hazard identified
methanol 67-56-1	sewage treatment plant (STP)						no hazard identified
methanol 67-56-1	aqua (intermittent releases)						no hazard identified
methanol 67-56-1	sediment (marine water)						no hazard identified
phenol 108-95-2	aqua (freshwater)		0,008 mg/l				
phenol 108-95-2	aqua (marine water)		0,001 mg/l				
phenol 108-95-2	sediment (freshwater)				0,091 mg/kg		
phenol 108-95-2	sediment (marine water)				0,009 mg/kg		
phenol 108-95-2	Soil				0,136 mg/kg		
phenol 108-95-2	sewage treatment plant (STP)		2,1 mg/l				
phenol 108-95-2	Predator						no potential for bioaccumulation
phenol 108-95-2	aqua (intermittent releases)		0,031 mg/l				
phenol 108-95-2	Air						no hazard identified
Naphthalene 91-20-3	aqua (freshwater)		0,0024 mg/l				
Naphthalene 91-20-3	aqua (marine water)		0,0024 mg/l				
Naphthalene 91-20-3	sediment (freshwater)				0,0672 mg/kg		
Naphthalene 91-20-3	sediment (marine water)				0,0672 mg/kg		
Naphthalene 91-20-3	sewage treatment plant (STP)		2,9 mg/l				
Naphthalene	Soil				0,0533		

91-20-3				mg/kg		
Naphthalene 91-20-3	aqua (intermittent releases)		0,02 mg/l			
formaldehyde 50-00-0	aqua (freshwater)		0,44 mg/l			
formaldehyde 50-00-0	aqua (marine water)		0,44 mg/l			
formaldehyde 50-00-0	Air					no hazard identified
formaldehyde 50-00-0	sediment (freshwater)			2,3 mg/kg		
formaldehyde 50-00-0	sediment (marine water)			2,3 mg/kg		
formaldehyde 50-00-0	Soil			0,2 mg/kg		
formaldehyde 50-00-0	sewage treatment plant (STP)		0,19 mg/l			
formaldehyde 50-00-0	Predator					no potential for bioaccumulation

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Silver >= 99,9 % Ag as powder (>100nm<1mm) classified for environment 7440-22-4	Workers	inhalation	Long term exposure - systemic effects		0,1 mg/m3	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/m3	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
methanol 67-56-1	Workers	inhalation	Long term exposure - systemic effects		260 mg/m3	no hazard identified
methanol 67-56-1	Workers	inhalation	Acute/short term exposure - systemic effects		260 mg/m3	no hazard identified
methanol 67-56-1	Workers	inhalation	Long term exposure - local effects		260 mg/m3	no hazard identified
methanol 67-56-1	Workers	inhalation	Acute/short term exposure - local effects		260 mg/m3	no hazard identified
methanol 67-56-1	Workers	dermal	Long term exposure - systemic effects		40 mg/kg	no hazard identified
methanol 67-56-1	Workers	dermal	Acute/short term exposure - systemic effects		40 mg/kg	no hazard identified
methanol 67-56-1	General population	inhalation	Long term exposure - systemic effects		50 mg/m3	no hazard identified
methanol 67-56-1	General population	inhalation	Acute/short term exposure - systemic effects		50 mg/m3	no hazard identified
methanol 67-56-1	General population	inhalation	Long term exposure - local effects		50 mg/m3	no hazard identified
methanol 67-56-1	General population	inhalation	Acute/short term exposure - local effects		50 mg/m3	no hazard identified
methanol 67-56-1	General population	dermal	Long term exposure - systemic effects		8 mg/kg	no hazard identified
methanol 67-56-1	General population	dermal	Acute/short term exposure - systemic effects		8 mg/kg	no hazard identified
methanol 67-56-1	General population	oral	Long term exposure - systemic effects		8 mg/kg	no hazard identified
methanol 67-56-1	General population	oral	Acute/short term exposure - systemic effects		8 mg/kg	no hazard identified
phenol 108-95-2	Workers	dermal	Long term exposure - systemic effects		1,23 mg/kg	no potential for bioaccumulation
phenol 108-95-2	Workers	Inhalation	Long term exposure - systemic effects		8 mg/m3	no potential for bioaccumulation
phenol 108-95-2	Workers	Inhalation	Acute/short term exposure - local effects		16 mg/m3	no potential for bioaccumulation
phenol 108-95-2	General population	Inhalation	Long term exposure - systemic effects		1,32 mg/m3	no potential for bioaccumulation
phenol 108-95-2	General population	dermal	Long term exposure - systemic effects		0,4 mg/kg	no potential for bioaccumulation
phenol 108-95-2	General population	oral	Long term exposure - systemic effects		0,4 mg/kg	no potential for bioaccumulation
Naphthalene 91-20-3	Workers	dermal	Long term exposure -		3,57 mg/kg	

			systemic effects			
Naphthalene 91-20-3	Workers	inhalation	Long term exposure - systemic effects		25 mg/m3	
Naphthalene 91-20-3	Workers	inhalation	Long term exposure - local effects		25 mg/m3	
formaldehyde 50-00-0	Workers	inhalation	Long term exposure - systemic effects		9 mg/m3	no hazard identified
formaldehyde 50-00-0	Workers	dermal	Long term exposure - systemic effects		240 mg/kg	no hazard identified
formaldehyde 50-00-0	Workers	dermal	Long term exposure - local effects		0,037 mg/cm2	no hazard identified
formaldehyde 50-00-0	General population	dermal	Long term exposure - local effects		0,012 mg/cm2	no hazard identified
formaldehyde 50-00-0	General population	oral	Long term exposure - systemic effects		4,1 mg/kg	no hazard identified
formaldehyde 50-00-0	General population	inhalation	Long term exposure - systemic effects		3,2 mg/m3	no hazard identified
formaldehyde 50-00-0	General population	inhalation	Long term exposure - local effects		0,1 mg/m3	no hazard identified
formaldehyde 50-00-0	General population	dermal	Long term exposure - systemic effects		102 mg/kg	no hazard identified
formaldehyde 50-00-0	Workers	inhalation	Long term exposure - local effects		0,375 mg/m3	no hazard identified
formaldehyde 50-00-0	Workers	inhalation	Acute/short term exposure - local effects		0,75 mg/m3	no hazard identified

Biological Exposure Indices:

Ingredient [Regulated substance]	Parameters	Biological specimen	Sampling time	Conc.	Basis of biol. exposure index	Remark	Additional Information
Methanol 67-56-1 [METHANOL]	methanol	Urine	Sampling time period is for long-term exposures, at the end of the shift after several preceding ones./ Sampling time period is at end of exposure or at end of shift.	15 mg/l	DE BGW		
Phenol 108-95-2	phenol	Urine	Sampling time: End of shift.	300 mg/l	DE BAT		
Phenol 108-95-2	Phenol with hydrolysis	Creatinine in urine	Sampling time: End of shift.	120 mg/g	DE BGW		

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/suction at the workplace.

Respiratory protection:

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): Isobutylene-isoprene rubber (IIR; ≥ 0.7 mm thickness) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Isobutylene-isoprene rubber (IIR; ≥ 0.7 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:

Protective eye equipment should conform to EN166.
Protective goggles

Skin protection:

Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.
Suitable protective clothing

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	silver
Odor	Solvent
Melting point	Not applicable, Product is a liquid
Solidification temperature	< 0 °C (< 32 °F)
Initial boiling point	> 200 °C (> 392 °F)
Flammability	Not applicable
Explosive limits	
lower	1,2 %(V);
upper	23,5 %(V);
Flash point	125 °C (257 °F)
Auto-ignition temperature	Currently under determination
Decomposition temperature	Currently under determination
pH	Not applicable
Viscosity (kinematic)	Currently under determination
Viscosity, dynamic (Brookfield; Instrument: RVT; 25 °C (77 °F); speed of rotation: 10 min-1)	35.000 - 50.000 mPa.s no method
Solubility (qualitative) (Solvent: Water)	Insoluble
Partition coefficient: n-octanol/water	Not applicable
Vapour pressure (20 °C (68 °F))	Mixture 0,13 mbar
Density ()	2,75 g/cm ³ no method
Relative vapour density:	Currently under determination
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

Reaction with strong oxidants.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

No decomposition if used according to specifications.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

None if used for intended purpose.

In case of fire toxic gases can be released.

SECTION 11: Toxicological information

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
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	LD50	> 2.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Phenol-formaldehyde polymer 9003-35-4	LD50	4.100 mg/kg	rat	not specified
methanol 67-56-1	Acute toxicity estimate (ATE)	300 mg/kg		Expert judgement
phenol 108-95-2	Acute toxicity estimate (ATE)	140 mg/kg		Expert judgement
phenol 108-95-2	LD50	140 mg/kg	Human	not specified
Naphthalene 91-20-3	LD50	490 mg/kg	rat	not specified
Formaldehyde 50-00-0	Acute toxicity estimate (ATE)	100 mg/kg		Expert judgement

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
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
phenol 108-95-2	LD50	660 mg/kg	rat	equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity)
Naphthalene 91-20-3	LD50	> 16.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Formaldehyde 50-00-0	LD50	270 mg/kg	rabbit	not specified

Acute inhalative 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	Test atmosphere	Exposure time	Species	Method
phenol 108-95-2	LC50	> 0,9 mg/l	dust/mist	8 h	rat	equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)
phenol 108-95-2	Acute toxicity estimate (ATE)	1 mg/l	dust/mist	4 h		Expert judgement
Naphthalene 91-20-3	LC50	> 100 ppm		8 h	rat	

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
methanol 67-56-1	not irritating	20 h	rabbit	BASF Test
phenol 108-95-2	corrosive	3 min	Human, normal, human-derived epidermal keratinocytes	OECD Guideline 431 (In Vitro Skin Corrosion: Reconstructed Human Epidermis (RHE) Test Method)
phenol 108-95-2	corrosive	1 min	rabbit	not specified
Naphthalene 91-20-3	slightly irritating		rabbit	not specified
Formaldehyde 50-00-0	corrosive	20 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
methanol 67-56-1	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
phenol 108-95-2	corrosive		rabbit	equivalent or similar to OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Naphthalene 91-20-3	slightly irritating		rabbit	Draize Test

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
methanol 67-56-1	not sensitising	Guinea pig maximisation test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
phenol 108-95-2	not sensitising	Buehler test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
Naphthalene 91-20-3	not sensitising	no data	guinea pig	not specified
Formaldehyde 50-00-0	sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity:

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

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
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)
methanol 67-56-1	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
methanol 67-56-1	negative	in vitro mammalian cell micronucleus test	without		not specified
methanol 67-56-1	negative	mammalian cell gene mutation assay	with and without		equivalent or similar to OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
phenol 108-95-2	positive	in vitro mammalian cell micronucleus test	with and without		equivalent or similar to OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
phenol 108-95-2	negative without metabolic activation	in vitro mammalian chromosome aberration test	with and without		equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Naphthalene 91-20-3	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		not specified
Formaldehyde 50-00-0	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		not specified
Formaldehyde 50-00-0	negative	bacterial reverse mutation assay (e.g Ames test)	without		Ames Test
methanol 67-56-1	negative	intraperitoneal		mouse	equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
phenol 108-95-2	positive	intraperitoneal		mouse	equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

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
methanol 67-56-1	not carcinogenic	inhalation: vapour	18 m 19 h/d	mouse	male/female	equivalent or similar OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
phenol 108-95-2	not carcinogenic	oral: drinking water	103 w daily	mouse	male/female	equivalent or similar OECD Guideline 451 (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
methanol 67-56-1	NOAEL P 1,3 mg/l NOAEL F1 0,13 mg/l NOAEL F2 0,13 mg/l	Two generation study	inhalation	rat	equivalent or similar to OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)
phenol 108-95-2	NOAEL P 71 mg/kg NOAEL F1 70 mg/kg NOAEL F2 1.000 mg/l	two-generation study	oral: drinking water	rat	equivalent or similar to OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)

STOT-single exposure:

May cause damage to organs.

No substance 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
methanol 67-56-1	NOAEL 6,63 mg/l	inhalation: vapour	4 weeks 6 h/d, 5 d/w	rat	equivalent or similar to OECD Guideline 412 (Repeated Dose Inhalation Toxicity: 28/14-Day)
methanol 67-56-1	NOAEL 0,13 mg/l	inhalation: vapour	12 m 20 h/d	rat	equivalent or similar to OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
phenol 108-95-2	NOAEL 71 mg/kg	oral: drinking water	13 w daily	rat	equivalent or similar to OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
phenol 108-95-2	NOAEL 20 mg/m3	inhalation	90 d 8 h/d, 5 d/w	monkey	not specified
phenol 108-95-2	NOAEL 130 mg/kg	dermal	18 d 5 h/d, 5 d/w	rabbit	not specified
Formaldehyde 50-00-0	NOAEL 15 mg/kg	oral: drinking water	up to 105 w daily ad libitum	rat	equivalent or similar to OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

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.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
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)
Phenol-formaldehyde polymer 9003-35-4	LC50	Toxicity > Water solubility	48 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
methanol 67-56-1	LC50	15.400 mg/l	96 h	Lepomis macrochirus	EPA-660 (Methods for Acute Toxicity Tests with Fish, Macroinvertebrates and Amphibians)
methanol 67-56-1	NOEC	7.900 mg/l	200 h	Oryzias latipes	OECD Guideline 210 (fish early lite stage toxicity test)
phenol 108-95-2	LC50	8,9 mg/l	96 h	Oncorhynchus mykiss	EPA-660 (Methods for Acute Toxicity Tests with Fish, Macroinvertebrates and Amphibians)
phenol 108-95-2	NOEC	0,077 mg/l	60 d	Cirrhinus mrigala	OECD Guideline 215 (Fish, Juvenile Growth Test)
Naphthalene 91-20-3	LC50	0,11 mg/l	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	OECD Guideline 203 (Fish, Acute Toxicity Test)
Formaldehyde 50-00-0	LC50	6,7 mg/l	96 h	Morone saxatilis	OECD Guideline 203 (Fish, Acute Toxicity Test)
Formaldehyde 50-00-0	NOEC	48 mg/l	28 d	Oryzias latipes	OECD Guideline 215 (Fish, Juvenile Growth 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
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	EC50	0,00022 mg/l	48 h	Daphnia magna	other guideline:
Phenol-formaldehyde polymer 9003-35-4	EC50	Toxicity > Water solubility	48 h	Daphnia pulex	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
methanol 67-56-1	EC50	18.260 mg/l	96 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
phenol 108-95-2	EC50	3,1 mg/l	48 h	Ceriodaphnia dubia	other guideline:
Naphthalene 91-20-3	EC50	2,16 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Formaldehyde 50-00-0	EC50	5,8 mg/l	48 h	Daphnia pulex	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
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)

phenol 108-95-2	NOEC	0,16 mg/l	16 d	Daphnia magna	other guideline:
Formaldehyde 50-00-0	NOEC	6,4 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

Toxicity (Algae):

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

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	EC10	0,00016 mg/l	15 d	other:	other guideline:
Phenol-formaldehyde polymer 9003-35-4	EC50	Toxicity > Water solubility	24 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
methanol 67-56-1	EC50	22.000 mg/l	96 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
phenol 108-95-2	EC50	61,1 mg/l	96 h	Pseudokirchneriella subcapitata (reported as Selenastrum capricornutum)	other guideline:
Formaldehyde 50-00-0	EC50	4,89 mg/l	72 h	Desmodesmus subspicatus	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
methanol 67-56-1	IC50	> 1.000 mg/l	3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
phenol 108-95-2	EC50	766 mg/l	3 h	activated sludge, industrial	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Naphthalene 91-20-3	EC10	> 20 mg/l	18 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)
Formaldehyde 50-00-0	EC50	19 mg/l	3 h	activated sludge	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
Phenol-formaldehyde polymer 9003-35-4	readily biodegradable	aerobic	> 60 %	10 d	ISO DIS 9408 (Ultimate Aerobic Biodegradability Method by Determining the Oxygen Demand in a Closed Respirometer)
methanol 67-56-1	readily biodegradable	aerobic	82 - 92 %	30 d	EU Method C.4-E (Determination of the "Ready" Biodegradability Closed Bottle Test)
phenol 108-95-2	readily biodegradable	aerobic	62 %	100 h	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
Naphthalene 91-20-3	readily biodegradable	aerobic	> 74 %	28 d	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
Formaldehyde 50-00-0	readily biodegradable	aerobic	93 - 95 %	30 d	EU Method C.4-E (Determination of the "Ready" Biodegradability Closed Bottle Test)

12.3. Bioaccumulative potential

Hazardous substances CAS-No.	Bioconcentration factor (BCF)	Exposure time	Temperature	Species	Method
Silver >= 99,9 % Ag in powder (>100nm<1mm) 7440-22-4	70	42 d	20 °C	Cyprinus carpio	other guideline:
methanol 67-56-1	< 10	72 h		Leuciscus idus melanotus	not specified
phenol 108-95-2	17,5	5 h	25 °C	Danio rerio (reported as Brachydanio rerio)	OECD Guideline 305 E (Bioaccumulation: Flow-through Fish Test)
Naphthalene 91-20-3	> 23 - 168	56 d		Cyprinus carpio	OECD Guideline 305 (Bioconcentration: Flow-through Fish Test)

12.4. Mobility in soil

Hazardous substances CAS-No.	LogPow	Temperature	Method
Phenol-formaldehyde polymer 9003-35-4	3,564	25 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
methanol 67-56-1	-0,77		other guideline:
phenol 108-95-2	1,47	30 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Naphthalene 91-20-3	3,4	25 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Formaldehyde 50-00-0	0,35	25 °C	QSAR (Quantitative Structure Activity Relationship)

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
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.
Phenol-formaldehyde polymer 9003-35-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
methanol 67-56-1	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
phenol 108-95-2	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Naphthalene 91-20-3	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Formaldehyde 50-00-0	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:

In consultation with the responsible local authority, must be subjected to special treatment.

Waste code

080312

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

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):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
VOC content (2010/75/EU)	20,9 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Germany):

WGK: WGK 3: highly hazardous to water (Ordinance on facilities for handling substances that are hazardous to water (AwSV))
Classification according to AwSV, Annex 1 (5.2)

Storage class according to TRGS 510: 10

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H225 Highly flammable liquid and vapour.
 H228 Flammable solid.
 H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H311 Toxic in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H331 Toxic if inhaled.
 H335 May cause respiratory irritation.
 H341 Suspected of causing genetic defects.
 H350 May cause cancer.
 H351 Suspected of causing cancer.
 H370 Causes damage to organs.
 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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