



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

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TEROSON SB 412

SDS No. : 76892
V011.0

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

1.1. Product identifier

TEROSON SB 412
UFI: VQV6-YX1X-Q20A-EM3J

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

Intended use:
adhesive and sealant

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

SDSinfo.Adhesive@henkel.com

For Safety Data Sheet updates please visit our website www.mysds.henkel.com 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):

Flammable solids	Category 1
H228 Flammable solid.	
Skin irritation	Category 2
H315 Causes skin irritation.	
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.	
Specific target organ toxicity - single exposure	Category 3
H336 May cause drowsiness or dizziness.	
Target organ: Central nervous system	
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**

Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane

rosin

cyclohexane

Rubber, natural

Signal word:

Danger

Hazard statement:

H228 Flammable solid.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H336 May cause drowsiness or dizziness.

H410 Very toxic to aquatic life with long lasting effects.

**Precautionary statement:
Prevention**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

No smoking.

P261 Avoid breathing vapors.

P273 Avoid release to the environment.

P280 Wear protective gloves/eye protection.

**Precautionary statement:
Response**

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

P370+P378 In case of fire: Use CO₂, dry chemical, or foam for extinction.**2.3. Other hazards**

Solvents contained in the product evaporate during processing and their vapors can form explosive/highly inflammable air/vapor mixtures.

The solvent vapors are heavier than air and may collect in high concentrations at floor level.

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
zinc oxide 1314-13-2 215-222-5 01-2119463881-32	20- < 25 %	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M acute = 1 M chronic = 1	
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n- hexane ----- 921-024-6 01-2119475514-35	10- < 20 %	Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315 STOT SE 3, H336 Aquatic Chronic 2, H411		
rosin 8050-09-7 232-475-7 01-2119480418-32	10- < 20 %	Skin Sens. 1, H317		
cyclohexane 110-82-7 203-806-2 01-2119463273-41	10- < 20 %	Asp. Tox. 1, H304 STOT SE 3, H336 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Flam. Liq. 2, H225 Skin Irrit. 2, H315	M acute = 1 M chronic = 1	EU OEL
Rubber, natural 9006-04-6 232-689-0	10- < 20 %	Resp. Sens. 1, H334 Skin Sens. 1, H317	oral:ATE = 2.043 mg/kg	
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics ----- 920-750-0 01-2119473851-33	1- < 3 %	Flam. Liq. 2, H225 Asp. Tox. 1, H304 STOT SE 3, H336 Aquatic Chronic 2, H411	inhalation:ATE = 23,31 mg/l;vapour	
n-Hexane 110-54-3 203-777-6 01-2119480412-44	0,1- < 1 %	Flam. Liq. 2, H225 Repr. 2, H361f Asp. Tox. 1, H304 STOT RE 2, H373 Skin Irrit. 2, H315 STOT SE 3, H336 Aquatic Chronic 2, H411	STOT RE 2; H373; C >= 5 %	EU OEL

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:

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

Delayed effects possible after inhalation.

Skin contact:

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

In case of adverse health effects seek medical advice.

Eye contact:

Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

Ingestion:

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

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

SKIN: Rash, Urticaria.

SKIN: Redness, inflammation.

Vapors may cause drowsiness and dizziness.

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

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

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

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

In case of fire toxic gases can be released.

5.3. Advice for firefighters

Wear self-contained breathing apparatus.

Wear protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective equipment.

Avoid contact with skin and eyes.

Keep unprotected persons away.

6.2. Environmental precautions

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

Inform authorities in the event of product spillage to water courses or sewage systems.

6.3. Methods and material for containment and cleaning up

Remove mechanically.

Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid open flames and sources of ignition.

Use explosion proof electric equipment.

Use only non-sparking tools.

Ground/bond container and receiving equipment.

Take precautionary measures against static discharge.

Hygiene measures:

- Do not eat, drink or smoke while working.
- Wash hands before work breaks and after finishing work.
- Take off contaminated clothing and wash before reuse.

7.2. Conditions for safe storage, including any incompatibilities

- Ensure good ventilation/extraction.
- Store in a cool, frost-free place.
- Storage at 15 to 25°C is recommended.
- Keep container tightly sealed.

7.3. Specific end use(s)

adhesive and sealant

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
Zinc oxide 1314-13-2		10	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
Zinc oxide 1314-13-2		1,25	Exposure limit(s):	If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Zinc oxide 1314-13-2			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Limestone 1317-65-3		10	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
Limestone 1317-65-3		1,25	Exposure limit(s):	If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Limestone 1317-65-3			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Cyclohexane 110-82-7 [CYCLOHEXANE]	200	700	Time Weighted Average (TWA):	Indicative	ECLTV
Cyclohexane 110-82-7	200	700	Exposure limit(s):	4	TRGS 900
Cyclohexane 110-82-7			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
Carbon black 1333-86-4		10	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
Carbon black 1333-86-4		1,25	Exposure limit(s):	If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
Carbon black 1333-86-4			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900
n-Hexane 110-54-3 [N-HEXANE]	20	72	Time Weighted Average (TWA):	Indicative	ECLTV
n-Hexane 110-54-3	50	180	Exposure limit(s):	8 If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
n-Hexane 110-54-3			Short Term Exposure Classification:	Category II: substances with a resorptive effect.	TRGS 900

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
zinc oxide 1314-13-2	aqua (freshwater)		14,4 µg/l				
zinc oxide 1314-13-2	aqua (marine water)		7,2 µg/l				
zinc oxide 1314-13-2	sewage treatment plant (STP)		100 µg/l				
zinc oxide 1314-13-2	sediment (freshwater)				146,9 mg/kg		
zinc oxide 1314-13-2	sediment (marine water)				162,2 mg/kg		
zinc oxide 1314-13-2	Soil				83,1 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				
cyclohexane 110-82-7	aqua (freshwater)		0,207 mg/l				
cyclohexane 110-82-7	aqua (marine water)		0,207 mg/l				
cyclohexane 110-82-7	aqua (intermittent releases)		0,207 mg/l				
cyclohexane 110-82-7	sediment (freshwater)				16,68 mg/kg		
cyclohexane 110-82-7	sediment (marine water)				16,68 mg/kg		
cyclohexane 110-82-7	Soil				3,38 mg/kg		
cyclohexane 110-82-7	sewage treatment plant (STP)		3,24 mg/l				
cyclohexane 110-82-7	Air						
cyclohexane 110-82-7	Predator						no potential for bioaccumulation

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	Workers	inhalation	Long term exposure - systemic effects		2035 mg/m ³	
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	Workers	dermal	Long term exposure - systemic effects		773 mg/kg	
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	General population	inhalation	Long term exposure - systemic effects		608 mg/m ³	
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	General population	dermal	Long term exposure - systemic effects		699 mg/kg	
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	General population	oral	Long term exposure - systemic effects		699 mg/kg	
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	
cyclohexane 110-82-7	Workers	inhalation	Acute/short term exposure - local effects		700 mg/m ³	no potential for bioaccumulation
cyclohexane 110-82-7	Workers	inhalation	Acute/short term exposure - systemic effects		700 mg/m ³	no potential for bioaccumulation
cyclohexane 110-82-7	Workers	inhalation	Long term exposure - systemic effects		700 mg/m ³	no potential for bioaccumulation
cyclohexane 110-82-7	Workers	inhalation	Long term exposure - local effects		700 mg/m ³	no potential for bioaccumulation
cyclohexane 110-82-7	Workers	dermal	Long term exposure - systemic effects		2016 mg/kg	no potential for bioaccumulation
cyclohexane 110-82-7	General population	inhalation	Acute/short term exposure - systemic effects		412 mg/m ³	no potential for bioaccumulation
cyclohexane 110-82-7	General population	inhalation	Acute/short term exposure - local effects		412 mg/m ³	no potential for bioaccumulation
cyclohexane 110-82-7	General population	dermal	Long term exposure - systemic effects		1186 mg/kg	no potential for bioaccumulation
cyclohexane 110-82-7	General population	oral	Long term exposure - systemic effects		59,4 mg/kg	no potential for bioaccumulation
cyclohexane 110-82-7	General population	inhalation	Long term exposure - systemic effects		206 mg/m ³	no potential for bioaccumulation
cyclohexane 110-82-7	General population	inhalation	Long term exposure - local effects		206 mg/m ³	no potential for bioaccumulation
Hydrocarbons, C7-9 -----	Workers	inhalation	Long term exposure - systemic effects		2035 mg/m ³	
Hydrocarbons, C7-9 -----	Workers	dermal	Long term exposure - systemic effects		773 mg/kg	
Hydrocarbons, C7-9 -----	General population	inhalation	Long term exposure -		608 mg/m ³	

			systemic effects			
Hydrocarbons, C7-9 -----	General population	dermal	Long term exposure - systemic effects		699 mg/kg	
Hydrocarbons, C7-9 -----	General population	oral	Long term exposure - systemic effects		699 mg/kg	
n-Hexane 110-54-3	General population	inhalation	Long term exposure - systemic effects		16 mg/m3	
n-Hexane 110-54-3	Workers	dermal	Long term exposure - systemic effects		11 mg/kg	
n-Hexane 110-54-3	General population	dermal	Long term exposure - systemic effects		5,3 mg/kg	
n-Hexane 110-54-3	Workers	inhalation	Long term exposure - systemic effects		75 mg/m3	
n-Hexane 110-54-3	General population	oral	Long term exposure - systemic effects		4 mg/kg	

Biological Exposure Indices:

Ingredient [Regulated substance]	Parameters	Biological specimen	Sampling time	Conc.	Basis of biol. exposure index	Remark	Additional Information
Cyclohexane 110-82-7	1,2-Cyclohexane diol, with hydrolysis	Creatinine in 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.	150 mg/g	DE BGW		
n-Hexane 110-54-3	Hexane-2,5-dione plus 4,5-Dihydroxy-2-hexanone (with hydrolysis)	Urine	Sampling time: End of shift.	5 mg/l	DE BGW		

8.2. Exposure controls:

Engineering controls:
Use only in well ventilated areas.

Respiratory protection:
In case of dust formation, we recommend wearing of appropriate respiratory protection equipment with particle filter P (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:
Goggles which can be tightly sealed.
Protective eye equipment should conform to EN166.

Skin protection:

Wear protective equipment.

Protective clothing that covers arms and legs.

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

Advices to personal protection equipment:

Use only personal protection that's CE-labelled according to Directive 89/686/EEC (Europe) or to Regulation No. 819 of 19 August 1994 (Norway), or equivalent.

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	black
Odor	hydrocarbons
Physical state	solid
Melting point	> -50 °C (> -58 °F)
Solidification temperature	Not applicable, Product is a solid.
Initial boiling point (1.013 hPa)	60 °C (140 °F)Supplier method
Flammability	The substance or mixture is a flammable solid with the subcategory 1.
Explosive limits	
lower [mass/vol]	7 g/cm ³
upper [mass/vol]	1,1 g/cm ³
Flash point	-16 °C (3.2 °F); Dummy
Auto-ignition temperature	Not applicable, Product is a solid.
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, Product is non-soluble (in water).
Viscosity (kinematic)	Not applicable, Product is a solid.
Viscosity, dynamic (; 20 °C (68 °F); speed of rotation: 200 min ⁻¹)	60 - 70 Pa*s Supplier method
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Insoluble
Partition coefficient: n-octanol/water	Not applicable
Vapour pressure (20 °C (68 °F))	Mixture 18000 Pa
Vapour pressure (50 °C (122 °F))	61000 Pa
Density (20 °C (68 °F))	1,19 - 1,23 g/cm ³ Dichte Pyknometer; HT-Methode; Henkel Iberica NS-06
Relative vapour density:	Not applicable, Product is a solid.
Particle characteristics	Not applicable, mixture is a paste.

9.2. Other information**9.2.1. Information with regard to physical hazard classes**

Flammable Solids	
Burning rate	45 mm/s
Burning time	

SECTION 10: Stability and reactivity**10.1. Reactivity**

Oxidizers.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

Heat, flames, sparks and other sources of ignition.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

No decomposition if used according to specifications.

SECTION 11: Toxicological information

General toxicological information:

An allergic reaction cannot be excluded after repeated skin contact.

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
zinc oxide 1314-13-2	LD50	> 5.000 mg/kg	rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	LD50	> 5.840 mg/kg	rat	not specified
rosin 8050-09-7	LD50	2.800 mg/kg	rat	not specified
cyclohexane 110-82-7	LD50	> 5.000 mg/kg	rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
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
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics -----	LD50	> 5.840 mg/kg	rat	not specified
n-Hexane 110-54-3	LD50	16.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)

Acute dermal toxicity:

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

Hazardous substances CAS-No.	Value type	Value	Species	Method
zinc oxide 1314-13-2	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Hydrocarbons, C6-C7, n- alkanes, isoalkanes, cyclics, <5% n-hexane -----	LD50	> 2.800 mg/kg	rat	not specified
rosin 8050-09-7	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
cyclohexane 110-82-7	LD50	> 2.000 mg/kg	rabbit	equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity)
Rubber, natural 9006-04-6	LD50	> 4.000 mg/kg	not specified	not specified
Hydrocarbons, C7-C9, n- alkanes, isoalkanes, cyclics -----	LD50	> 2.800 mg/kg	rat	not specified
n-Hexane 110-54-3	LD50	> 2.000 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
zinc oxide 1314-13-2	LC50	> 5,7 mg/l	dust/mist	4 h	rat	equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	LC50	> 25,2 mg/l	vapour	4 h	rat	not specified
cyclohexane 110-82-7	LC50	> 32,880 mg/l	vapour	4 h	rat	equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics -----	LC50	> 23,3 mg/l	vapour	4 h	rat	equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics -----	Acute toxicity estimate (ATE)	23,31 mg/l	vapour	4 h		Expert judgement
n-Hexane 110-54-3	LC50	> 31,86 mg/l	vapour	4 h	rat	not specified

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
zinc oxide 1314-13-2	not irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	irritating	4 h	rabbit	equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
rosin 8050-09-7	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
cyclohexane 110-82-7	irritating		rabbit	Weight of evidence
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics -----	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
n-Hexane 110-54-3	not irritating		rabbit	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
zinc oxide 1314-13-2	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
rosin 8050-09-7	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
cyclohexane 110-82-7	slightly irritating		rabbit	equivalent or similar to OECD Guideline 405 (Acute Eye Irritation / Corrosion)
n-Hexane 110-54-3	not irritating		rabbit	not specified

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
zinc oxide 1314-13-2	not sensitising	Guinea pig maximisation test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
cyclohexane 110-82-7	not sensitising	Buehler test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
n-Hexane 110-54-3	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity:

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

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
zinc oxide 1314-13-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
zinc oxide 1314-13-2	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
zinc oxide 1314-13-2	ambiguous	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)
cyclohexane 110-82-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
cyclohexane 110-82-7	negative	mammalian cell gene mutation assay	with and without		equivalent or similar to OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
n-Hexane 110-54-3	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
n-Hexane 110-54-3	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
zinc oxide 1314-13-2	negative	inhalation: aerosol		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
zinc oxide 1314-13-2	negative	inhalation: aerosol		rat	OECD Guideline 489 (In Vivo Mammalian Alkaline Comet Assay)
cyclohexane 110-82-7	negative	inhalation: vapour		rat	equivalent or similar to OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test)
n-Hexane 110-54-3	negative	inhalation: vapour		mouse	not specified
n-Hexane 110-54-3	negative	inhalation: vapour		rat	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
zinc oxide 1314-13-2	not carcinogenic	oral: drinking water	1 y daily	mouse	male/female	not specified
n-Hexane 110-54-3	not carcinogenic	inhalation: vapour	2 y 6 h/d; 5 d/w	mouse	female	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
zinc oxide 1314-13-2	NOAEL P 7,5 mg/kg NOAEL F1 15 mg/kg	Two generation study	oral: gavage	rat	equivalent or similar to OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)
cyclohexane 110-82-7	NOAEL F1 7000 ppm	two-generation study	inhalation: vapour	rat	equivalent or similar to OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)
n-Hexane 110-54-3	NOAEL P 9000 ppm NOAEL F1 3000 ppm NOAEL F2 3000 ppm	Two generation study	inhalation: vapour	rat	OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)

STOT-single exposure:

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

Hazardous substances CAS-No.	Assessment	Route of exposure	Target Organs	Remarks
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	Category 3 with narcotic effects.			
cyclohexane 110-82-7	Category 3 with narcotic effects.			

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
zinc oxide 1314-13-2	NOAEL 31,52 mg/kg	oral: gavage	90 d daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
zinc oxide 1314-13-2	NOAEL 1.5 mg/m ³	inhalation	3 m 6 h/d, 5 d/w	rat	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
zinc oxide 1314-13-2	NOAEL 1.000 mg/kg	dermal	90 d 6 h/d, daily	rat	OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)
cyclohexane 110-82-7		inhalation: vapour	13-14 w 6 h/d, 5 d/w	mouse	EPA OPPTS 870.3465 (90-Day Inhalation Toxicity)
n-Hexane 110-54-3	NOAEL 568 mg/kg	oral: gavage	90 d 5 d/w	rat	not specified
n-Hexane 110-54-3	NOAEL 500 ppm	inhalation: vapour	90 d 6 h/d; 5 d/w	mouse	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)

Aspiration hazard:

The mixture is classified based on Viscosity data.

Hazardous substances CAS-No.	Viscosity (kinematic) Value	Temperature	Method	Remarks
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	0,61 mm ² /s	25 °C	not specified	
cyclohexane 110-82-7	0,41 mm ² /s	40 °C	not specified	
n-Hexane 110-54-3	0,45 mm ² /s	25 °C	not specified	

11.2 Information on other hazards

not applicable

SECTION 12: Ecological information

General ecological information:

Do not empty into drains, soil or bodies of 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
zinc oxide 1314-13-2	LC50	0,142 mg/l	96 h	Thymallus arcticus	OECD Guideline 203 (Fish, Acute Toxicity Test)
zinc oxide 1314-13-2	NOEC	0,44 mg/l	72 d	Oncorhynchus mykiss	other guideline:
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	LL50	11,4 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
rosin 8050-09-7	LC50	Toxicity > Water solubility	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
cyclohexane 110-82-7	LC50	4,53 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
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)
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics -----	LL50	> 3 - 10 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
n-Hexane 110-54-3	LC50	> 1 - 10 mg/l	96 h	not specified	OECD Guideline 203 (Fish, Acute 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
zinc oxide 1314-13-2	EC50	1 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	EL50	3 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
rosin 8050-09-7	EL50	Toxicity > Water solubility	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
cyclohexane 110-82-7	EC50	0,9 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics -----	EL50	> 4,6 - 10 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
n-Hexane 110-54-3	EC50	2,1 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 oxide 1314-13-2	NOEC	0,058 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Hydrocarbons, C6-C7, n- alkanes, isoalkanes, cyclics, <5% n-hexane -----	NOEC	0,17 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Hydrocarbons, C7-C9, n- alkanes, isoalkanes, cyclics -----	NOELR	1 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.

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 oxide 1314-13-2	NOEC	0,017 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
zinc oxide 1314-13-2	EC50	0,17 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydrocarbons, C6-C7, n- alkanes, isoalkanes, cyclics, <5% n-hexane -----	EL50	> 30 - 100 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydrocarbons, C6-C7, n- alkanes, isoalkanes, cyclics, <5% n-hexane -----	NOELR	3 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)
cyclohexane 110-82-7	EC50	9,317 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
cyclohexane 110-82-7	NOEC	0,95 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydrocarbons, C7-C9, n- alkanes, isoalkanes, cyclics -----	EL50	> 10 - 30 mg/l	72 h	Raphidocelis subcapitata (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydrocarbons, C7-C9, n- alkanes, isoalkanes, cyclics -----	NOELR	10 mg/l	72 h	Raphidocelis subcapitata (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
n-Hexane 110-54-3	EC50	> 1 - 10 mg/l	72 h	not specified	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
zinc oxide 1314-13-2	IC50	5,2 mg/l	3 h	not specified	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)
cyclohexane 110-82-7	IC50	29 mg/l	15 h	other:	not specified
Rubber, natural 9006-04-6	EC 50	> 10.000 mg/l			OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
n-Hexane 110-54-3	EC50	> 1 - 10 mg/l	3 h	not specified	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
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	readily biodegradable	aerobic	98 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
rosin 8050-09-7	readily biodegradable	aerobic	71 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
cyclohexane 110-82-7	readily biodegradable	aerobic	77 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics -----	readily biodegradable	aerobic	98 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
n-Hexane 110-54-3	readily biodegradable	aerobic	81 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry 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
cyclohexane 110-82-7	167			Pimephales promelas	QSAR (Quantitative Structure Activity Relationship)

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)
cyclohexane 110-82-7	3,44	25 °C	QSAR (Quantitative Structure Activity Relationship)
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics -----	5,65	25 °C	QSAR (Quantitative Structure Activity Relationship)
n-Hexane 110-54-3	4	20 °C	other guideline:

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
zinc oxide 1314-13-2	According to Annex XIII to Regulation (EC) No 1907/2006, a PBT and vPvB assessment shall not be conducted for inorganic substances.
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane -----	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
rosin 8050-09-7	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
cyclohexane 110-82-7	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics -----	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
n-Hexane 110-54-3	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

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.

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SECTION 14: Transport information

14.1. UN number or ID number

ADR	3175
RID	3175
ADN	3175
IMDG	3175
IATA	3175

14.2. UN proper shipping name

ADR	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (Solvent naphtha,Cyclohexane)
RID	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (Solvent naphtha,Cyclohexane)
ADN	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (Solvent naphtha,Cyclohexane)
IMDG	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (Solvent naphtha,Cyclohexane)
IATA	Solids containing flammable liquid, n.o.s. (Solvent naphtha,Cyclohexane)

14.3. Transport hazard class(es)

ADR	4.1
RID	4.1
ADN	4.1
IMDG	4.1
IATA	4.1

14.4. Packing group

ADR	II
RID	II
ADN	II
IMDG	II
IATA	II

14.5. Environmental hazards

ADR	Environmentally Hazardous
RID	Environmentally Hazardous
ADN	Environmentally Hazardous
IMDG	Marine Pollutant
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable Tunnelcode: (E)
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

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)	45,0 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Germany):

WGK: WGK 2: significantly water endangering (Ordinance on facilities for handling substances that are hazardous to water (AwSV))
Classification according to AwSV, Annex 1 (5.2)

BG regulations, rules, infos:

BG data sheet: BGI 621 Solvents

Storage class according to TRGS 510: 4.1B

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.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H336 May cause drowsiness or dizziness.
H361f Suspected of damaging fertility.
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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