

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 24.02.2025	Print Date:
6.0	11.11.2025	Date of first issue: 30.06.2015	12.11.2025

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

1.1 Product identifier

Product name : Klüberpaste 46 MR 401

Article-No. : 005108

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

Use of the Substance/Mixture : Lubricant

Recommended restrictions on use : Restricted to professional users.

1.3 Details of the supplier of the safety data sheet

Company : Klüber Lubrication München GmbH & Co. KG
Geisenhausenerstr. 7
81379 München
Deutschland
Tel.: +49 (0) 89 7876 0
Fax: +49 (0) 89 7876 333
info@klueber.com

E-mail address of person responsible for the SDS : mcm@klueber.com

National contact : Klüber Lubrication Deutschland GmbH & Co. KG
Geisenhausenerstraße 7
81379 München
Deutschland
Tel.: +49 (0) 89 7876 0
Fax: +49 (0) 89 7876 565
customer.service.de@klueber.com

1.4 Emergency telephone number

Emergency telephone number : +49 89 7876 700 (24 hrs)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.

Long-term (chronic) aquatic hazard, H411: Toxic to aquatic life with long lasting effects.

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Category 2

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms	:	 
Signal word	:	Warning
Hazard statements	:	H317 May cause an allergic skin reaction. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	:	Prevention: P272 Contaminated work clothing should not be allowed out of the workplace. P273 Avoid release to the environment. P280 Wear protective gloves. Response: P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. P362 + P364 Take off contaminated clothing and wash it before reuse. P391 Collect spillage.

Hazardous components which must be listed on the label:

Condensation products of fatty acids, tall oil with 2-amino-2-ethylpropanediol

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : polyalkylene glycol oil
lithium soap
solid lubricant

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	specific concentration limit M-Factor Notes Acute toxicity estimate	Concentration (% w/w)
trizinc bis(orthophosphate)	7779-90-0 231-944-3 030-011-00-6 01-2119485044-40-XXXX	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	M-Factor: 1/1	$\geq 10 - < 20$
disodium sebacate	17265-14-4 241-300-3 01-2120762063-61-XXXX	Eye Irrit. 2; H319		$\geq 1 - < 10$
Reaction mass of tris(dipentylidithiocarbamate-S,S')antimony and [bis(2-ethylhexyl)dithiocarbamate-S,S']bis(dipentylidithiocarbamate-S,S')antimony and bis[bis(2-ethylhexyl)dithiocarbamate-S,S'](dipentylidithiocarbamate-S,S')antimony and tris[bis(2-ethylhexyl)dithiocarbamate-S,S']antimony	948-063-1 01-2120795895-29-XXXX	Aquatic Chronic 4; H413		$\geq 1 - < 2,5$

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mato-S,S']antimony				
dilithium azelate	38900-29-7 254-184-4 01-2120119814-57-XXXX 01-2120119814-57-XXXX 01-2120119814-57-XXXX 01-2120119814-57-XXXX	Acute Tox. 4; H302		$\geq 1 - < 10$
Condensation products of fatty acids, tall oil with 2-amino-2-ethylpropanediol	946-010-7 01-2120770934-44-XXXX	Skin Sens. 1B; H317		$\geq 1 - < 10$
zinc oxide	1314-13-2 215-222-5 030-013-00-7 01-2119463881-32-XXXX	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	M-Factor: 1/1	$\geq 0,25 - < 1$
2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol	95-38-5 202-414-9 01-2119777867-13-XXXX	Acute Tox. 4; H302 Skin Corr. 1C; H314 Eye Dam. 1; H318 STOT RE 2; H373 (Digestive organs, thymus gland) Aquatic Acute 1; H400 Aquatic Chronic 1; H410	M-Factor: 10/1	$\geq 0,25 - < 1$
N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-	939-700-4 01-2119982395-25-XXXX	Skin Irrit. 2; H315 Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 2; H411	M-Factor: 1/	$\geq 0,1 - < 0,25$

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methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)				
Substances with a workplace exposure limit :				
titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7 236-675-5 01-2119489379-17-XXXX	Not classified		>= 10 - < 20
Ethylene, tetrafluoro-, polymer	9002-84-0 618-337-2	Not classified		>= 1 - < 10
Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified	64742-52-5 265-155-0 649-465-00-7 01-2119467170-45-XXXX	Not classified	Note L	>= 1 - < 10

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- If inhaled : Remove person to fresh air. If signs/symptoms continue, get medical attention.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
Keep respiratory tract clear.
If breathing is irregular or stopped, administer artificial respiration.
- In case of skin contact : Take off all contaminated clothing immediately.
Wash off immediately with soap and plenty of water.
Get medical attention immediately if irritation develops and persists.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids,

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for at least 10 minutes.
If eye irritation persists, consult a specialist.

If swallowed : Get medical attention if symptoms occur.
If unconscious, place in recovery position and seek medical advice.
Keep respiratory tract clear.
Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.

Move the victim to fresh air.
If unconscious, place in recovery position and seek medical advice.
Keep respiratory tract clear.
Do not induce vomiting without medical advice.
Rinse mouth with water.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No symptoms known or expected.

Risks : May cause an allergic skin reaction.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products : Carbon oxides
Nitrogen oxides (NOx)
Sulphur oxides
Oxides of phosphorus
Halogenated compounds
Metal oxides

5.3 Advice for firefighters

Special protective equipment : In the event of fire, wear self-contained breathing apparatus.

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for firefighters	Use personal protective equipment. Exposure to decomposition products may be a hazard to health.
Further information	: Standard procedure for chemical fires. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	: Evacuate personnel to safe areas. Ensure adequate ventilation. Do not breathe vapours, aerosols. Refer to protective measures listed in sections 7 and 8.
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6.2 Environmental precautions

Environmental precautions	: Do not allow contact with soil, surface or ground water. If the product contaminates rivers and lakes or drains inform respective authorities.
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6.3 Methods and material for containment and cleaning up

Methods for cleaning up	: Pick up and transfer to properly labelled containers.
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6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	: Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Wash hands and face before breaks and immediately after handling the product. Do not get in eyes or mouth or on skin. Do not get on skin or clothing. Do not ingest. Do not repack. These safety instructions also apply to empty packaging which may still contain product residues. Keep container closed when not in use.
Hygiene measures	: Wash face, hands and any exposed skin thoroughly after

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handling.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in original container. Keep container closed when not in use. Keep in a dry, cool and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in accordance with the particular national regulations. Keep in properly labelled containers.

Storage class (TRGS 510) : 11, Combustible Solids

7.3 Specific end use(s)

Specific use(s) : Specific instructions for handling, not required.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
trizinc bis(orthophosphate)	7779-90-0	MAK (measured as the alveolate fraction)	0,1 mg/m3	DE DFG MAK (2023-07-01)
	Peak-limit: excursion factor (category): 4; I			
	Further information: Zinc chloride: peak limit I(1), Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
		MAK (inhalable fraction)	2 mg/m3	DE DFG MAK (2023-07-01)
	Peak-limit: excursion factor (category): 4; I			
	Further information: Zinc chloride: peak limit I(1), Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7	MAK (measured as the alveolate fraction)	0,3 mg/m3	DE DFG MAK (2023-07-01)
	Peak-limit: excursion factor (category): 8; II			
	Further information: Substances that cause cancer in humans or animals or that are considered to be carcinogenic for humans and for which a MAK value can be derived., Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
		AGW (Inhalable fraction)	10 mg/m3 (Titanium dioxide)	DE TRGS 900 (2014-04-02)

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		Peak-limit: excursion factor (category): 2;(II)		
		Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child		
		AGW (Alveolate fraction)	1,25 mg/m3 (Titanium dioxide)	DE TRGS 900 (2014-04-02)
		Peak-limit: excursion factor (category): 2;(II)		
		Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child		
		BM (Alveolar dust fraction)	0,5 mg/m3	DE TRGS 527 (2020-02-19)
Ethylene, tetrafluoro-, polymer	9002-84-0	MAK (measured as the alveolate fraction)	0,3 mg/m3	DE DFG MAK (2023-07-01)
		Peak-limit: excursion factor (category): 8; II		
		Further information: Substances that cause cancer in humans or animals or that are considered to be carcinogenic for humans and for which a MAK value can be derived., Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed		
		MAK (inhalable fraction)	4 mg/m3	DE DFG MAK (2023-07-01)
		Peak-limit: excursion factor (category): 8; II		
		Further information: Substances that cause cancer in humans or animals or that are considered to be carcinogenic for humans and for which a MAK value can be derived., Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed		
		BM (Alveolar dust fraction)	0,5 mg/m3	DE TRGS 527 (2020-02-19)
Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified	64742-52-5	AGW (Vapour and aerosols)	5 mg/m3	DE TRGS 900 (2018-06-07)
		Peak-limit: excursion factor (category): 4;(II)		
		Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child		
zinc oxide	1314-13-2	MAK (measured as the alveolate fraction)	0,1 mg/m3	DE DFG MAK (2023-07-01)
		Peak-limit: excursion factor (category): 4; I		
		Further information: Zinc chloride: peak limit I(1), Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed		
		MAK (inhalable fraction)	2 mg/m3	DE DFG MAK (2023-07-01)
		Peak-limit: excursion factor (category): 4; I		
		Further information: Zinc chloride: peak limit I(1), Damage to the embryo or		

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foetus is unlikely when the MAK value or the BAT value is observed

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
disodium sebacate	Workers	Skin contact	Long-term systemic effects	10 mg/kg
	Workers	Inhalation	Long-term systemic effects	35,26 mg/m3
Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified	Workers	Inhalation	Long-term local effects	5,58 mg/m3
	Workers	Inhalation	Long-term systemic effects	2,73 mg/m3
	Workers	Skin contact	Long-term systemic effects	0,97 mg/kg
1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol	Workers	Inhalation		4,408 mg/m3
	Workers	Dermal		6,25 mg/kg bw/day
dilithium azelate	Workers	Dermal	Long-term systemic effects	13,5 mg/kg bw/day
	Workers	Dermal	Long-term local effects	0,172 mg/cm2
bis(4-(1,1,3,3-tetramethylbutyl)phenyl)amine	Workers	Inhalation	Long-term systemic effects	49,3 mg/m3
	Workers	Dermal	Long-term systemic effects	14 mg/kg bw/day
Condensation products of fatty acids, tall oil with 2-amino-2-ethylpropanediol	Workers	Dermal	Long-term systemic effects	8,33 mg/kg bw/day
2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol	Workers	Skin contact	Long-term systemic effects	0,06 mg/kg
	Workers	Inhalation	Long-term systemic effects	0,46 mg/m3
	Workers	Skin contact	Acute systemic effects	2 mg/kg
	Workers	Inhalation	Acute systemic effects	14 mg/m3

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

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Substance name	Environmental Compartment	Value
trizinc bis(orthophosphate)	Fresh water	0,085 mg/l
	Marine water	0,0425 mg/l
	Microbiological Activity in Sewage Treatment Systems	0,59 mg/l
	Fresh water sediment	867,4 mg/kg
	Marine sediment	957,7 mg/kg
	Soil	490,7 mg/kg
disodium sebacate	Fresh water	0,018 mg/l
	Marine water	0,002 mg/l
	Sewage treatment plant	10 mg/l
	Fresh water sediment	0,548 mg/kg
	Marine sediment	0,055 mg/kg
	Soil	0,099 mg/kg
Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified	Oral	9,33 mg/kg
1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol	Fresh water	0,041 mg/l
	Marine water	0,0041 mg/l
	Fresh water sediment	380,62 mg/kg
	Marine sediment	38,06 mg/kg
	Sewage treatment plant	8000 mg/l
	Soil	308,98 mg/kg
dilithium azelate	Fresh water	0,023 mg/l
	Marine water	0,002 mg/l
zinc oxide	Fresh water	0,0179 mg/l
	Marine water	0,009 mg/l
	Sewage treatment plant	0,1245 mg/l
	Fresh water sediment	182,8 mg/kg
	Marine sediment	201,9 mg/kg
2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol	Soil	103,4 mg/kg
	Fresh water	0,00003 mg/l
	Marine water	0,000003 mg/l
	Fresh water sediment	0,376 mg/kg
	Marine sediment	0,0376 mg/kg
	Soil	0,075 mg/kg

8.2 Exposure controls

Engineering measures

none

Personal protective equipment

Eye/face protection : Safety glasses

Hand protection

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Material : Nitrile rubber
Break through time : > 10 min
Protective index : Class 1

Remarks : Wear protective gloves. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case.
The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Respiratory protection : Not required; except in case of aerosol formation.

Filter type : Filter type P

Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Environmental exposure controls

Air : Should not be released into the environment.
Soil : Do not allow contact with soil, surface or ground water.
The product should not be allowed to enter drains, water courses or the soil.
Water : Do not allow contact with soil, surface or ground water.
The product should not be allowed to enter drains, water courses or the soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : solid

Form : paste

Colour : white

Odour : characteristic

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Odour Threshold	:	No data available
Melting point/ range	:	No data available
Boiling point/boiling range	:	No data available
Flammability	:	Flammability (solid, gas): Combustible Solids
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	Not applicable
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
pH	:	Not applicable substance/mixture is non-soluble (in water)
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	Not applicable
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	No data available

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Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	< 0,001 hPa (20 °C)
Relative density	:	1,23 (20 °C) Reference substance: Water The value is calculated
Density	:	1,23 g/cm ³ (20 °C)
Bulk density	:	Not applicable
Relative vapour density	:	No data available
Particle characteristics Particle size	:	Not applicable
Particle Size Distribution	:	Not applicable

9.2 Other information

Explosives	:	Not explosive
Oxidizing properties	:	No data available
Self-ignition	:	No data available
Evaporation rate	:	No data available
Sublimation point	:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazards to be specially mentioned.

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10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : No conditions to be specially mentioned.

10.5 Incompatible materials

Materials to avoid : No materials to be especially mentioned.

10.6 Hazardous decomposition products

Hazardous decomposition products : >280 °C danger of forming toxic fluorine-containing pyrolysis products.

SECTION 11: Toxicological information

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

Acute toxicity

Based on available data, the classification criteria are not met.

Product:

Acute oral toxicity : Acute toxicity estimate: > 2.000 mg/kg
Method: Calculation method

Acute inhalation toxicity : Remarks: This information is not available.

Acute dermal toxicity : Symptoms: Redness, Local irritation

Components:

trizinc bis(orthophosphate):

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401

disodium sebacate:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401
GLP: no

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes

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Assessment: The substance or mixture has no acute dermal toxicity

Reaction mass of tris(dipentyldithiocarbamato-S,S')antimony and [bis(2-ethylhexyl)dithiocarbamato-S,S']bis(dipentyldithiocarbamato-S,S')antimony and bis[bis(2-ethylhexyl)dithiocarbamato-S,S'](dipentyldithiocarbamato-S,S')antimony and tris[bis(2-ethylhexyl)dithiocarbamato-S,S']antimony

:

Acute oral toxicity : (Rat): > 16.400 mg/kg

Acute dermal toxicity : (Rat): > 16.000 mg/kg

dilithium azelate:

Acute oral toxicity : LD50 (Rat): > 300 mg/kg
Method: OECD Test Guideline 420
GLP: yes

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Condensation products of fatty acids, tall oil with 2-amino-2-ethylpropanediol:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 425
Assessment: The substance or mixture has no acute oral toxicity

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

zinc oxide:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): > 5,7 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: The substance or mixture has no acute dermal

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toxicity

2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol:

Acute oral toxicity : LD50 (Rat): 1.265 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

:

Acute oral toxicity : LD50 (Rat): 3.313 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute inhalation toxicity : (Rat): > 5,09 mg/l
Method: OECD Test Guideline 403
GLP: no

Ethylene, tetrafluoro-, polymer:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute inhalation toxicity : LC50 (Rat): > 5,53 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

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Method: OECD Test Guideline 403

GLP: yes

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Product:

Remarks : This information is not available.

Components:

trizinc bis(orthophosphate):

Species : Rabbit
Assessment : No skin irritation
Result : No skin irritation

disodium sebacate:

Species : Rabbit
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : No skin irritation
GLP : no

Reaction mass of tris(dipentylidithiocarbamato-S,S')antimony and [bis(2-ethylhexyl)dithiocarbamato-S,S']bis(dipentylidithiocarbamato-S,S')antimony and bis[bis(2-ethylhexyl)dithiocarbamato-S,S'](dipentylidithiocarbamato-S,S')antimony and tris[bis(2-ethylhexyl)dithiocarbamato-S,S']antimony

:

Species : Rabbit
Assessment : No skin irritation
Result : No skin irritation

dilithium azelate:

Assessment : No skin irritation
Result : No skin irritation

Condensation products of fatty acids, tall oil with 2-amino-2-ethylpropanediol:

Species : reconstructed human epidermis (RhE)
Assessment : No skin irritation
Result : No skin irritation

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zinc oxide:

Species	: Rabbit
Assessment	: No skin irritation
Method	: OECD Test Guideline 404
Result	: No skin irritation

2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol:

Species	: Rabbit
Method	: OECD Test Guideline 404
Result	: Corrosive, category 1C - where responses occur after exposures between 1 hour and 4 hours and observations up to 14 days.
GLP	: yes

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

:

Species	: Rabbit
Assessment	: Irritating to skin.
Method	: Draize Test
Result	: Irritating to skin.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

Species	: Rabbit
Assessment	: No skin irritation
Method	: OECD Test Guideline 404
Result	: No skin irritation
GLP	: no

Ethylene, tetrafluoro-, polymer:

Species	: Rabbit
Assessment	: No skin irritation
Result	: No skin irritation

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

Species	: Rabbit
Assessment	: No skin irritation
Method	: OECD Test Guideline 404
Result	: No skin irritation

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Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Product:

Remarks : This information is not available.

Components:

trizinc bis(orthophosphate):

Species	: Rabbit
Assessment	: No eye irritation
Method	: OECD Test Guideline 405
Result	: No eye irritation
GLP	: yes

disodium sebacate:

Species	: Rabbit
Assessment	: Irritating to eyes.
Method	: OECD Test Guideline 437
Result	: Irritating to eyes.
GLP	: yes

Reaction mass of tris(dipentylthiocarbamate-S,S')antimony and [bis(2-ethylhexyl)dithiocarbamate-S,S']bis(dipentylthiocarbamate-S,S')antimony and bis[bis(2-ethylhexyl)dithiocarbamate-S,S'](dipentylthiocarbamate-S,S')antimony and tris[bis(2-ethylhexyl)dithiocarbamate-S,S']antimony

:

Species	: Rabbit
Assessment	: No eye irritation
Result	: No eye irritation

dilithium azelate:

Species	: Rabbit
Assessment	: No eye irritation
Result	: No eye irritation

Condensation products of fatty acids, tall oil with 2-amino-2-ethylpropanediol:

Species	: Rabbit
Assessment	: No eye irritation
Result	: No eye irritation

zinc oxide:

Species	: Rabbit
Assessment	: No eye irritation
Method	: OECD Test Guideline 405
Result	: No eye irritation

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GLP : yes

2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol:

Species	: Rabbit
Assessment	: Corrosive
Method	: OECD Test Guideline 405
Result	: Corrosive

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

:

Species	: Rabbit
Assessment	: No eye irritation
Method	: Draize Test
Result	: No eye irritation

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

Species	: Rabbit
Assessment	: No eye irritation
Method	: OECD Test Guideline 405
Result	: No eye irritation

Ethylene, tetrafluoro-, polymer:

Species	: Rabbit
Assessment	: No eye irritation
Result	: No eye irritation

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

Species	: Rabbit
Assessment	: No eye irritation
Method	: OECD Test Guideline 405
Result	: No eye irritation
GLP	: yes

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Based on available data, the classification criteria are not met.

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Product:

Remarks : This information is not available.

Components:

trizinc bis(orthophosphate):

Species : Guinea pig
Assessment : Does not cause skin sensitisation.
Method : OECD Test Guideline 406
Result : Does not cause skin sensitisation.
GLP : yes

disodium sebacate:

Species : Guinea pig
Assessment : Did not cause sensitisation on laboratory animals.
Result : Did not cause sensitisation on laboratory animals.

Reaction mass of tris(dipentylidithiocarbamato-S,S')antimony and [bis(2-ethylhexyl)dithiocarbamato-S,S']bis(dipentylidithiocarbamato-S,S')antimony and bis[bis(2-ethylhexyl)dithiocarbamato-S,S'] (dipentylidithiocarbamato-S,S')antimony and tris[bis(2-ethylhexyl)dithiocarbamato-S,S']antimony

:

Species : Mouse
Assessment : Does not cause skin sensitisation.
Result : Does not cause skin sensitisation.

dilithium azelate:

Assessment : Does not cause skin sensitisation.
Result : Does not cause skin sensitisation.

Condensation products of fatty acids, tall oil with 2-amino-2-ethylpropanediol:

Assessment : The product is a skin sensitiser, sub-category 1B.
Result : The product is a skin sensitiser, sub-category 1B.

zinc oxide:

Test Type : Maximisation Test
Species : Guinea pig
Assessment : Does not cause skin sensitisation.
Method : OECD Test Guideline 406
Result : Does not cause skin sensitisation.
GLP : yes

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2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol:

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

:

Test Type	:	Maximisation Test
Species	:	Guinea pig
Assessment	:	The product is a skin sensitiser, sub-category 1B.
Method	:	OECD Test Guideline 406
Result	:	The product is a skin sensitiser, sub-category 1B.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

Species	:	Mouse
Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 429
Result	:	Does not cause skin sensitisation.

Ethylene, tetrafluoro-, polymer:

Assessment	:	Did not cause sensitisation on laboratory animals.
Result	:	Did not cause sensitisation on laboratory animals.

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Product:

Genotoxicity in vitro	:	Remarks: No data available
Genotoxicity in vivo	:	Remarks: No data available

Components:

trizinc bis(orthophosphate):

Germ cell mutagenicity-	:	Tests on bacterial or mammalian cell cultures did not show
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Assessment mutagenic effects.

disodium sebacate:

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Condensation products of fatty acids, tall oil with 2-amino-2-ethylpropanediol:

Genotoxicity in vitro : Remarks: In vitro tests did not show mutagenic effects

zinc oxide:

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol:

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

:

Genotoxicity in vitro : Test Type: Ames test
Method: OECD Test Guideline 471
Result: negative

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter $\leq 10 \mu\text{m}$]:

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Cell type: Bone marrow
Application Route: Intraperitoneal injection

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Method: OECD Test Guideline 474
Result: negative

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not show
mutagenic effects.

Carcinogenicity

Based on available data, the classification criteria are not met.

Product:

Remarks : No data available

Components:

trizinc bis(orthophosphate):

Carcinogenicity -
Assessment : Not classifiable as a human carcinogen.

zinc oxide:

Carcinogenicity -
Assessment : Not classifiable as a human carcinogen.

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

:

Carcinogenicity -
Assessment : Carcinogenicity classification not possible from current data.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

Carcinogenicity -
Assessment : No evidence of carcinogenicity in animal studies.

Ethylene, tetrafluoro-, polymer:

Carcinogenicity -
Assessment : Not classifiable as a human carcinogen.

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

Carcinogenicity -
Assessment : Not classifiable as a human carcinogen.

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Reproductive toxicity

Based on available data, the classification criteria are not met.

Product:

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

Components:

trizinc bis(orthophosphate):

Reproductive toxicity - Assessment : - Fertility -
No toxicity to reproduction
- Teratogenicity -
No effects on or via lactation

disodium sebacate:

Reproductive toxicity - Assessment : - Fertility -
No toxicity to reproduction
- Teratogenicity -
No effects on or via lactation

Condensation products of fatty acids, tall oil with 2-amino-2-ethylpropanediol:

Reproductive toxicity - Assessment : - Fertility -
Animal testing did not show any effects on fertility.

zinc oxide:

Reproductive toxicity - Assessment : - Fertility -
No toxicity to reproduction
- Teratogenicity -
No toxicity to reproduction

2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol:

Reproductive toxicity - Assessment : - Fertility -
Animal testing did not show any effects on fertility.
- Teratogenicity -
Did not show teratogenic effects in animal experiments.

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-

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methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

:

Effects on fertility : Species: Rat
Application Route: Oral
General Toxicity - Parent: NOAEL: 45 mg/kg body weight
General Toxicity F1: NOAEL: 45 mg/kg body weight
Fertility: NOAEL: 150 mg/kg body weight
Method: OECD Test Guideline 422

Effects on foetal development : Species: Rat
Application Route: Oral
Duration of Single Treatment: 28 h
General Toxicity Maternal: NOAEL: 45 mg/kg body weight
Developmental Toxicity: NOAEL: 45 mg/kg body weight
Method: OECD Test Guideline 422

Reproductive toxicity - Assessment : - Fertility -
No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.
- Teratogenicity -
No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

Reproductive toxicity - Assessment : - Fertility -
No toxicity to reproduction
- Teratogenicity -
No effects on or via lactation

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

Effects on foetal development : Species: Rat
Application Route: Dermal
General Toxicity Maternal: LOAEL: 125 mg/kg body weight
Teratogenicity: NOAEL: ≥ 2.000 mg/kg body weight
Developmental Toxicity: NOAEL: ≥ 2.000 mg/kg body weight
Embryo-foetal toxicity: NOAEL: ≥ 2.000 mg/kg body weight
Method: OECD Test Guideline 414
Result: No effects on fertility and early embryonic development were detected.

Reproductive toxicity - Assessment : - Fertility -
No toxicity to reproduction
- Teratogenicity -

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No toxicity to reproduction

STOT - single exposure

Based on available data, the classification criteria are not met.

Product:

Remarks : No data available

Components:

dilithium azelate:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

zinc oxide:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

Ethylene, tetrafluoro-, polymer:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Based on available data, the classification criteria are not met.

Product:

Remarks : No data available

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Components:

dilithium azelate:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

zinc oxide:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol:

Exposure routes : Ingestion
Target Organs : Digestive organs, thymus gland
Assessment : May cause damage to organs through prolonged or repeated exposure.

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm]:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Ethylene, tetrafluoro-, polymer:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Product:

Remarks : This information is not available.

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Components:

2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol:

Species	:	Rat
	:	100 mg/kg
NOAEL	:	20 mg/kg
Application Route	:	Oral

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

:

Species	:	Rat
NOAEL	:	45 mg/kg
Application Route	:	Oral
Exposure time	:	28 d
Method	:	OECD Test Guideline 422

Aspiration toxicity

Based on available data, the classification criteria are not met.

Product:

This information is not available.

Components:

trizinc bis(orthophosphate):

No aspiration toxicity classification

disodium sebacate:

No aspiration toxicity classification

dilithium azelate:

No aspiration toxicity classification

zinc oxide:

No aspiration toxicity classification

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N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

:

No aspiration toxicity classification

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter $\leq 10 \mu\text{m}$]:

No aspiration toxicity classification

Ethylene, tetrafluoro-, polymer:

No aspiration toxicity classification

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

No aspiration toxicity classification

11.2 Information on other hazards

Endocrine disrupting properties

Based on available data, the classification criteria are not met.

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

Remarks : Information given is based on data on the components and the toxicology of similar products.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Toxicity to daphnia and other : Remarks: No data available

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aquatic invertebrates

Toxicity to algae/aquatic plants : Remarks: No data available

Toxicity to microorganisms :
Remarks: No data available

Components:

trizinc bis(orthophosphate):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 0,14 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,08 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 0,136 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 1

M-Factor (Chronic aquatic toxicity) : 1

disodium sebacate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 100 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: semi-static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : EL50 (Skeletonema costatum (marine diatom)): 38,7 mg/l
Exposure time: 72 h
Test Type: static test
Method: ISO 10253
GLP: yes

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Reaction mass of tris(dipentylidithiocarbamato-S,S')antimony and [bis(2-ethylhexyl)dithiocarbamato-S,S']bis(dipentylidithiocarbamato-S,S')antimony and bis[bis(2-ethylhexyl)dithiocarbamato-S,S'](dipentylidithiocarbamato-S,S')antimony and tris[bis(2-ethylhexyl)dithiocarbamato-S,S']antimony

:

Ecotoxicology Assessment

Chronic aquatic toxicity : May cause long lasting harmful effects to aquatic life.

dilithium azelate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 100 mg/l
aquatic invertebrates Exposure time: 48 h

zinc oxide:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1,55 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1 mg/l
aquatic invertebrates Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapitata (green algae)): 0,136
plants mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

M-Factor (Acute aquatic : 1
toxicity)

Toxicity to microorganisms : EC50 (activated sludge): > 1.000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
GLP: yes

Toxicity to daphnia and other : 0,04 mg/l
aquatic invertebrates Exposure time: 21 d
(Chronic toxicity) Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic : 1
toxicity)

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2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 0,3 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,163 mg/l
Exposure time: 48 h
Test Type: Immobilization
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): 0,03 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 10

Toxicity to microorganisms : EC50 (activated sludge): 26 mg/l
Exposure time: 3 h
Test Type: Respiration inhibition
Method: OECD Test Guideline 209

M-Factor (Chronic aquatic toxicity) : 1

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:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 1,3 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2,05 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 0,762 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201

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M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC20 (activated sludge): 15 mg/l
Exposure time: 3 h
Test Type: Respiration inhibition
Method: OECD Test Guideline 209

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter $\leq 10 \mu\text{m}$]:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10.000 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : LC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOELR: $\geq 1.000 \text{ mg/l}$
Exposure time: 28 d
Species: Oncorhynchus mykiss (rainbow trout)
Remarks: The value is calculated

Toxicity to daphnia and other aquatic invertebrates : NOELR: 10 mg/l
Exposure time: 21 d

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(Chronic toxicity)

Species: Daphnia magna (Water flea)

Test Type: Reproduction Test

Method: OECD Test Guideline 211

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Physico-chemical
removability : Remarks: No data available

Components:

trizinc bis(orthophosphate):

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

disodium sebacate:

Biodegradability : Result: Biodegradable
Biodegradation: 89 %
Exposure time: 28 d

Reaction mass of tris(dipentylidithiocarbamato-S,S')antimony and [bis(2-ethylhexyl)dithiocarbamato-S,S']bis(dipentylidithiocarbamato-S,S')antimony and bis[bis(2-ethylhexyl)dithiocarbamato-S,S'](dipentylidithiocarbamato-S,S')antimony and tris[bis(2-ethylhexyl)dithiocarbamato-S,S']antimony

:

Biodegradability : Result: Not rapidly biodegradable
Biodegradation: 20 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Condensation products of fatty acids, tall oil with 2-amino-2-ethylpropanediol:

Biodegradability : Result: Not rapidly biodegradable

zinc oxide:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol:

Biodegradability : Test Type: Primary biodegradation
Result: Not rapidly biodegradable
Method: OECD Test Guideline 301B

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:

Biodegradability : Test Type: Primary biodegradation
Inoculum: activated sludge
Result: Not rapidly biodegradable
Biodegradation: < 10 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: Not rapidly biodegradable
Biodegradation: 3 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
GLP: yes

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

disodium sebacate:

Partition coefficient: n-octanol/water : log Pow: -4,9 (20 °C)
pH: 7,8

Reaction mass of tris(dipentylidithiocarbamate-S,S')antimony and [bis(2-ethylhexyl)dithiocarbamate-S,S']bis(dipentylidithiocarbamate-S,S')antimony and bis[bis(2-ethylhexyl)dithiocarbamate-S,S'](dipentylidithiocarbamate-S,S')antimony and tris[bis(2-ethylhexyl)dithiocarbamate-S,S']antimony

:

Partition coefficient: n-octanol/water : log Pow: > 6,34

dilithium azelate:

Bioaccumulation : Bioconcentration factor (BCF): 3,0

Partition coefficient: n-octanol/water : log Pow: -3,56

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Condensation products of fatty acids, tall oil with 2-amino-2-ethylpropanediol:

Bioaccumulation : Bioconcentration factor (BCF): < 100

Partition coefficient: n-octanol/water : log Pow: 9,01

2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol:

Bioaccumulation : Bioconcentration factor (BCF): 371,8
Remarks: Does not accumulate in organisms.

Partition coefficient: n-octanol/water : log Pow: > 6

N,N-bis(2-ethylhexyl)-5-methyl-1H-benzotriazole-1-methylamine, N,N-bis(2-ethylhexyl)-4-methyl-1H-benzotriazole-1-methylamine, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-4-methyl-, 2H-Benzotriazole-2-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)

:

Bioaccumulation : Bioconcentration factor (BCF): 1.676

Partition coefficient: n-octanol/water : log Pow: 7,6

12.4 Mobility in soil

Product:

Mobility : Remarks: No data available

Distribution among environmental compartments : Remarks: No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

trizinc bis(orthophosphate):

Assessment : Remarks: Not applicable

zinc oxide:

Assessment : Remarks: Not applicable

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titanium dioxide; [in powder form containing <1 % of particles with aerodynamic diameter $\leq 10 \mu\text{m}$]:

Assessment : Non-classified vPvB substance. Non-classified PBT substance

Ethylene, tetrafluoro-, polymer:

Assessment : Non-classified vPvB substance. Non-classified PBT substance

Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil — unspecified:

Assessment : Non-classified PBT substance. Non-classified vPvB substance

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Waste codes should be assigned by the user based on the application for which the product was used.

The product should not be allowed to enter drains, water courses or the soil.

Do not dispose of with domestic refuse.

Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated packaging : Packaging that is not properly emptied must be disposed of as the unused product.

Dispose of waste product or used containers according to local regulations.

The following Waste Codes are only suggestions:

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Waste Code : used product, unused product
12 01 12*, spent waxes and fats

uncleaned packagings
15 01 10*, packaging containing residues of or contaminated
by hazardous substances

SECTION 14: Transport information

14.1 UN number or ID number

ADN	: UN 3077
ADR	: UN 3077
RID	: UN 3077
IMDG	: UN 3077
IATA	: UN 3077

14.2 UN proper shipping name

ADN	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Phosphate)
ADR	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Phosphate)
RID	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Phosphate)
IMDG	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Phosphate)
IATA	: Environmentally hazardous substance, solid, n.o.s. (Zinc Phosphate)

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADN	: 9	
ADR	: 9	
RID	: 9	
IMDG	: 9	

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IATA : 9

14.4 Packing group

ADN

Packing group : III
Classification Code : M7
Hazard Identification Number : 90
Labels : 9

ADR

Packing group : III
Classification Code : M7
Hazard Identification Number : 90
Labels : 9
Tunnel restriction code : (-)

RID

Packing group : III
Classification Code : M7
Hazard Identification Number : 90
Labels : 9

IMDG

Packing group : III
Labels : 9
EmS Code : F-A, S-F

IATA (Cargo)

Packing instruction (cargo aircraft) : 956
Packing instruction (LQ) : Y956
Packing group : III
Labels : Miscellaneous Dangerous Goods

IATA (Passenger)

Packing instruction (passenger aircraft) : 956
Packing instruction (LQ) : Y956
Packing group : III
Labels : Miscellaneous Dangerous Goods

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

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IATA (Passenger)

Environmentally hazardous : yes

IATA (Cargo)

Environmentally hazardous : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). (EU SVHC) : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

Regulation (EU) No 2024/590 on substances that deplete the ozone layer (EC 2024/590) : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) (EU POP) : Not applicable

Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals (EU PIC) : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) (EU. REACH-Annex XIV) : Not applicable

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Regulation (EU) 2019/1148 on the marketing and use of
explosives precursors

Not applicable

Seveso III: Directive 2012/18/EU of the European
Parliament and of the Council on the control of
major-accident hazards involving dangerous
substances.

E2

ENVIRONMENTAL HAZARDS

Water hazard class : WGK 3 highly hazardous to water
(Germany) Classification according to AwSV, Annex 1 (5.2)

TA Luft List (Germany) : 5.2.1: Total dust:
others: 38,01 %
5.2.5: Organic Substances:
Class 1: 2,82 %

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial and
livestock rearing emissions (integrated pollution prevention and
control)
Volatile organic compounds (VOC) content: 1,12 %

Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national
regulations, where applicable.

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements

H302	: Harmful if swallowed.
H314	: Causes severe skin burns and eye damage.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.

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H319	:	Causes serious eye irritation.
H373	:	May cause damage to organs through prolonged or repeated exposure if swallowed.
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.
H413	:	May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Note L	:	The harmonised classification as a carcinogen applies unless it can be shown that the substance contains less than 3 % of dimethyl sulphoxide extract as measured by IP 346 ("Determination of polycyclic aromatics in unused lubricating base oils and asphaltene free petroleum fractions - Dimethyl sulphoxide extraction refractive index method" Institute of Petroleum, London), in which case a classification in accordance with Title II of this Regulation shall be performed also for that hazard class.
Skin Corr.	:	Skin corrosion
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure
DE DFG MAK	:	Germany. MAK BAT Annex IIa
DE TRGS 527	:	Germany. TRGS 527 - Activities with nanomaterials
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
DE DFG MAK / MAK	:	MAK value
DE TRGS 527 / BM	:	Assessment scale
DE TRGS 900 / AGW	:	Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878 - DE



Klüberpaste 46 MR 401

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- Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:

Skin Sens. 1	H317
Aquatic Chronic 2	H411

Classification procedure:

Calculation method
Calculation method

- || Relevant changes compared to the last edition are highlighted at the left margin. This version replaces all previous editions.

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