

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

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 Sub-
stance/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
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
Material Compliance Management

National contact : Klüber Lubrication Deutschland
Geisenhausenerstraße 7
81379 München
Deutschland
Tel.: +49 89 7876 0
Fax: +49 89 7876 565
customer.service.de@klueber.com
www.klueber.com

1.4 Emergency telephone number

Emergency telephone num-
ber : +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, Cat- H411: Toxic to aquatic life with long lasting effects.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

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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 mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : polyalkylene glycol oil

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version
4.4

Revision Date:
04.12.2019

Date of last issue: 19.11.2019
Date of first issue: 30.06.2015

Print Date:
04.12.2019

lithium soap
solid lubricant

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration limits M-Factor Notes	Concentration (% w/w)
trizinc bis(orthophosphate)	7779-90-0 231-944-3 030-011-00-6 01-2119485044-40-XXXX	Aquatic Acute1; H400 Aquatic Chronic1; H410	M-Factor: 1/1	>= 10 - < 20
disodium sebacate	17265-14-4 241-300-3 01-2120762063-61-XXXX	Eye Irrit.2; H319		>= 1 - < 10
antimony compounds	15890-25-2 240-028-2 051-003-00-9	Acute Tox.4; H302 Acute Tox.4; H332 Aquatic Chronic2; H411	Note A, Note 1	>= 1 - < 2,5
1,3,4-Thiadiazolidine- 2,5-dithione, reaction products with hydro- gen peroxide and tert- dodecanethiol	939-692-2 01-2119983498-16-XXXX	Aquatic Chronic3; H412		>= 1 - < 2,5
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		>= 1 - < 10
Condensation prod- ucts of fatty acids, tall oil with 2-amino-2- ethylpropanediol	946-010-7 01-2120770934-44-XXXX	Skin Sens.1; H317		>= 1 - < 10

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

zinc oxide	1314-13-2 215-222-5 030-013-00-7 01-2119463881-32-XXXX	Aquatic Acute1; H400 Aquatic Chronic1; H410	M-Factor: 1/1	>= 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 RE2; H373 Aquatic Acute1; H400 Aquatic Chronic1; H410	M-Factor: 10/1	>= 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-methanamine, N,N-bis(2-ethylhexyl)-5-methyl-, 1H-Benzotriazole-1-methanamine, N,N-bis(2-ethylhexyl)-6-methyl-(Mixture)	939-700-4 01-2119982395-25-XXXX	Skin Irrit.2; H315 Skin Sens.1B; H317 Aquatic Acute1; H400 Aquatic Chronic2; H411	M-Factor: 1/1	>= 0,1 - < 0,25
Substances with a workplace exposure limit :				
titanium dioxide	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	64742-52-5 265-155-0 649-465-00-7	Not classified	Note L	>= 1 - < 10

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

	01-2119467170-45-XXXX			
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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, 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.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Allergic appearance
- Risks : May cause an allergic skin reaction.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

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

Specific hazards during fire-fighting : Fire may cause evolution of:
Carbon oxides
Halogenated compounds
Metal oxides
Nitrogen oxides (NO_x)
Oxides of phosphorus
Sulphur oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. 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.
Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust).
Do not breathe vapours, aerosols.
Refer to protective measures listed in sections 7 and 8.

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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Clean up promptly by sweeping or vacuum.
Keep in suitable, closed containers for disposal.

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.
Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
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 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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
titanium dioxide	13463-67-7	AGW (Inhalable fraction)	10 mg/m ³ (Titanium dioxide)	DE TRGS 900 (2014-04-02)
Peak-limit: excursion factor (category)	2;(II)			
Further information	General dust value. For this substance no specific occupational exposure limit value is established, since the AGS does not yet have information regarding unspecific action on the respiratory organs in excess of the normal values., Commission for dangerous substances, Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission).			
		AGW (Alveolate fraction)	1,25 mg/m ³ (Titanium dioxide)	DE TRGS 900 (2014-04-02)
Peak-limit: excursion factor (category)	2;(II)			
Further information	General dust value. For this substance no specific occupational exposure limit value is established, since the AGS does not yet have information regarding unspecific action on the respiratory organs in excess of the normal values., Commission for dangerous substances, Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission).			
Ethylene, tetrafluoro-, polymer	9002-84-0	AGW (Inhalable fraction)	10 mg/m ³	DE TRGS 900 (2014-04-02)
Peak-limit: excursion factor (category)	2;(II)			
Further information	General dust value. For this substance no specific occupational exposure limit value is established, since the AGS does not yet have information regarding unspecific action on the respiratory organs in excess of the normal values., Commission for dangerous substances, Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission).			
		AGW (Alveolate fraction)	1,25 mg/m ³	DE TRGS 900 (2014-04-02)
Peak-limit: excursion factor (category)	2;(II)			
Further information	General dust value. For this substance no specific occupational exposure limit value is established, since the AGS does not yet have information regarding unspecific action on the respiratory organs in excess of the normal values., Commission for dangerous substances, Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission).			

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

distillates (petroleum), hydrotreated heavy naphthenic	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	Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission)., Sum of vapor and aerosols., When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			

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

Substance name	End Use	Exposure routes	Potential health effects	Value
trizinc bis(orthophosphate)	Workers	Inhalation	Long-term systemic effects	5 mg/m3
	Workers	Skin contact	Long-term systemic effects	83 mg/kg
titanium dioxide	Workers	Inhalation	Long-term local effects	10 mg/m3
disodium sebacate	Workers	Skin contact	Long-term systemic effects	10 mg/kg
	Workers	Inhalation	Long-term systemic effects	35,26 mg/m3
1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol	Workers	Inhalation	Long-term systemic effects	4,408 mg/m3
	Workers	Skin contact	Long-term systemic effects	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	4,11 mg/m3
	Workers	Skin contact	Long-term systemic effects	1,17 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
zinc oxide	Workers	Inhalation	Long-term systemic effects	5 mg/m3
	Workers	Inhalation	Long-term local effects	0,5 mg/m3
	Workers	Skin contact	Long-term systemic effects	83 mg/kg
2-(2-heptadec-8-enyl-2-imidazolin-1-	Workers	Skin contact	Long-term systemic effects	0,06 mg/kg

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version
4.4

Revision Date:
04.12.2019

Date of last issue: 19.11.2019
Date of first issue: 30.06.2015

Print Date:
04.12.2019

yl)ethanol				
	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
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)	Industrial use	Inhalation	Long-term systemic effects	1,3 mg/m3
	Industrial use	Skin contact	Long-term systemic effects	0,4 mg/kg

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

Substance name	Environmental Compartment	Value
trizinc bis(orthophosphate)	Fresh water	0,0206 mg/l
	Marine water	0,0061 mg/l
	Microbiological Activity in Sewage Treatment Systems	0,100 mg/l
	Fresh water sediment	117,8 mg/kg
	Marine sediment	56,5 mg/kg
titanium dioxide	Soil	35,6 mg/kg
	Fresh water	0,184 mg/l
	Intermittent use/release	0,193 mg/l
	Marine water	0,0184 mg/l
	Sewage treatment plant	100 mg/l
	Marine sediment	100 mg/l
	Fresh water sediment	1000 mg/l
disodium sebacate	Soil	100 mg/l
	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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

	Soil	0,099 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
	Intermittent use/release	0,41 mg/l
	Microbiological Activity in Sewage Treatment Systems	8000 mg/l
	Fresh water sediment	380,62 mg/kg
	Marine sediment	38,06 mg/kg
	Soil	308,98 mg/kg
	Oral	6,67 mg/kg
dilithium azelate	Fresh water	0,023 mg/l
	Marine water	0,002 mg/l
bis(4-(1,1,3,3-tetramethylbutyl)phenyl)amine	Fresh water	0,00002 µg/l
	Marine water	0,000002 µg/l
	Fresh water sediment	0,00467 mg/kg
	Marine sediment	0,000467 mg/kg
	Soil	0,000934 mg/kg
zinc oxide	Fresh water	0,0206 mg/l
	Marine water	0,0061 mg/l
	Microbiological Activity in Sewage Treatment Systems	0,100 mg/l
	Fresh water sediment	117,8 mg/kg
	Marine sediment	56,5 mg/kg
	Soil	35,6 mg/kg
2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol	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
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)	Fresh water	0,000976 mg/l
	Marine water	0,000098 mg/l
	Intermittent use/release	0,00976 mg/l
	Soil	0,00184 - 0,842 mg/kg

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

	Fresh water sediment	0,0121 - 4,23 mg/kg
	Marine sediment	0,00121 - 0,423 mg/kg
	Microbiological Activity in Sewage Treatment Systems	0,69 mg/l

8.2 Exposure controls

Engineering measures

none

Personal protective equipment

Eye protection : Tightly fitting safety goggles

Hand protection

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.

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : paste
Colour : white
Odour : characteristic
Odour Threshold : No data available

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

pH	:	Not applicable
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	Not applicable
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Combustible Solids
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	< 0,001 hPa (20 °C)
Relative vapour density	:	No data available
Density	:	1,23 g/cm ³ (20 °C)
Bulk density	:	Not applicable
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	No data available

9.2 Other information

Sublimation point	:	Not applicable
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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

Self-ignition : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazards to be specially mentioned.

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 toxicological effects

Acute toxicity

Product:

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

Acute inhalation toxicity : Acute toxicity estimate: > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity : Symptoms: Redness, Local irritation

Components:

trizinc bis(orthophosphate):

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

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
Assessment: The substance or mixture has no acute dermal toxicity

antimony compounds:

Acute oral toxicity : LD50 (Rat): > 300 - 2.000 mg/kg
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat): > 2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The component/mixture is moderately toxic after short term inhalation.

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

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

Acute inhalation toxicity : LC50 (Rat): > 2,75 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.
Information given is based on data obtained from similar substances.

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Information given is based on data obtained from similar substances.

dilithium azelate:

Acute oral toxicity : LD50 (Rat): > 300 mg/kg

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

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 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)

:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

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:

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:

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
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

Product:

Remarks : This information is not available.

Components:

trizinc bis(orthophosphate):

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

disodium sebacate:

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

antimony compounds:

Species	: Rabbit
Remarks	: slight irritation

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

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

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

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:

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:

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

Serious eye damage/eye irritation

Product:

Remarks	:	This information is not available.
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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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

antimony compounds:

Species	:	Rabbit
Remarks	:	Moderate eye irritation

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

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:

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

Respiratory or skin sensitisation

Product:

Remarks	:	This information is not available.
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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.

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

Test Type	:	Buehler Test
Species	:	Guinea pig
Assessment	:	Did not cause sensitisation on laboratory animals.
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.

dilithium azelate:

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

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

Assessment	:	May cause sensitisation by skin contact.
Result	:	May cause sensitisation by skin contact.

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

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:

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:

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

Components:

trizinc bis(orthophosphate):

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

disodium sebacate:

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

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster fibroblasts
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
Remarks: Information given is based on data obtained from similar substances.

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

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:

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

distillates (petroleum), hydrotreated heavy naphthenic:

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
Method: OECD Test Guideline 474
Result: negative

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

Carcinogenicity

Product:

Remarks : No data available

Components:

trizinc bis(orthophosphate):

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

zinc oxide:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

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:

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:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

Reproductive toxicity

Product:

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

Components:

trizinc bis(orthophosphate):

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

disodium sebacate:

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

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

Effects on fertility : Species: Rat
Application Route: Oral
General Toxicity - Parent: NOAEL: 1.000 mg/kg body weight
General Toxicity F1: NOAEL: 1.000 mg/kg body weight
Method: OECD Test Guideline 421
Remarks: Information given is based on data obtained from similar substances.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

Reproductive toxicity - Assessment : No toxicity to reproduction
Animal testing did not show any effects on foetal development.

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

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

zinc oxide:

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

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

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility.
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-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 : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.
No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

titanium dioxide:

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

distillates (petroleum), hydrotreated heavy naphthenic:

Effects on foetal development : Species: Rat

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

ment

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 : No toxicity to reproduction
No toxicity to reproduction

STOT - single exposure

Components:

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

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

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:

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:

Assessment : The substance or mixture is not classified as specific target

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

organ toxicant, single exposure.

STOT - repeated exposure

Components:

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

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

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:

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:

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

Repeated dose toxicity

Product:

Remarks : This information is not available.

Components:

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

Species	: Rat
NOAEL	: 250 mg/kg
Application Route	: Oral
Method	: OECD Test Guideline 421
Remarks	: Information given is based on data obtained from similar substances.

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
Method	: OECD Test Guideline 422

Aspiration toxicity

Product:

This information is not available.

Components:

trizinc bis(orthophosphate):

No aspiration toxicity classification

disodium sebacate:

No aspiration toxicity classification

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

dilithium azelate:

No aspiration toxicity classification

zinc oxide:

No aspiration toxicity classification

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:

No aspiration toxicity classification

Ethylene, tetrafluoro-, polymer:

No aspiration toxicity classification

distillates (petroleum), hydrotreated heavy naphthenic:

No aspiration toxicity classification

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 aquatic invertebrates : Remarks: No data available

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

Toxicity to microorganisms : Remarks: No data available

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

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

antimony compounds:

Ecotoxicology Assessment

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

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): > 1.000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 41 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l Exposure time: 72 h Test Type: Growth inhibition Method: OECD Test Guideline 201

Ecotoxicology Assessment

Acute aquatic toxicity	:	Harmful to aquatic life.
Chronic aquatic toxicity	:	Harmful to aquatic life with long lasting effects.

dilithium azelate:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l 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 aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 0,136 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes
M-Factor (Acute aquatic toxicity)	:	1
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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

aquatic invertebrates (Chronic toxicity)
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 1

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

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)

:

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

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

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

M-Factor (Chronic aquatic toxicity) : 1

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

titanium dioxide:

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:

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: >= 1.000 mg/l
Exposure time: 28 d

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

Species: Oncorhynchus mykiss (rainbow trout)

Remarks: The value is calculated

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

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

Biodegradability : Test Type: Primary biodegradation
Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301C

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE

KLÜBER
LUBRICATION

Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

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)

:

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:

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: This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

Components:

disodium sebacate:

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

antimony compounds:

Partition coefficient: n-octanol/water : log Pow: 12,69 (20 °C)

1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 3,16

Partition coefficient: n-octanol/water : log Pow: 8 (20 °C)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

dilithium azelate:

Bioaccumulation : Bioconcentration factor (BCF): 3,0

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

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 : Remarks: Not applicable

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 mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).. This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB)..

: 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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

0.1% or higher..

Components:

trizinc bis(orthophosphate):

Assessment : Remarks: Not applicable

zinc oxide:

Assessment : Remarks: Not applicable

titanium dioxide:

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:

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

12.6 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 : 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.

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

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:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

SECTION 14: Transport information

14.1 UN number

ADR	:	UN 3077
IMDG	:	UN 3077
IATA	:	UN 3077

14.2 UN proper shipping name

ADR	:	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)

ADR	:	9
IMDG	:	9
IATA	:	9

14.4 Packing group

ADR		
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	:	Class 9 - Miscellaneous dangerous substances and articles

IATA (Passenger)

Packing instruction (passenger aircraft)	:	956
Packing instruction (LQ)	:	Y956
Packing group	:	III

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

Labels : Class 9 - Miscellaneous dangerous substances and articles

14.5 Environmental hazards

ADR

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

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 Transport in bulk according to Annex II of Marpol and the IBC Code

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 - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	: This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).
REACH - List of substances subject to authorisation (Annex XIV)	: Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	: Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants	: Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	: Not applicable
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	: Not applicable

E1

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version 4.4	Revision Date: 04.12.2019	Date of last issue: 19.11.2019 Date of first issue: 30.06.2015	Print Date: 04.12.2019
----------------	------------------------------	---	---------------------------

E2 ENVIRONMENTAL
HAZARDS

34 Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams), (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)

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

TA Luft List (Germany) : Total dust:
others: 38,28 %

Inorganic substances in powdered form:
portion Class 3: 1,79 %

Inorganic substances in vapour or gaseous form:
Not applicable
Organic Substances:
portion Class 1: < 0,01 %
others: 59,92 %

Carcinogenic substances:
Not applicable
Mutagenic:
Not applicable
Toxic to reproduction:
Not applicable

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial 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.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

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.
H319	: Causes serious eye irritation.
H332	: Harmful if inhaled.
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.
H412	: Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Note 1	: The concentration stated or, in the absence of such concentrations, the generic concentrations set out in this Regulation are the percentages by weight of the metallic element calculated with reference to the total weight of the mixture.
Note A	: Without prejudice to Article 17(2), the name of the substance must appear on the label in the form of one of the designations given in Part 3. In Part 3, use is sometimes made of a general description such as "... compounds" or "... salts". In this case, the supplier is required to state on the label the correct name, due account being taken of section 1.1.1.4.
Note L	: The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 % DMSO 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. This note applies only to certain complex oil-derived substances in Part 3.
DE TRGS 900	: Germany. TRGS 900 - Occupational exposure limit values.
DE TRGS 900 / AGW	: Time Weighted Average

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; 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 - 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; 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

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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 - DE



Klüberpaste 46 MR 401

Version	Revision Date:	Date of last issue: 19.11.2019	Print Date:
4.4	04.12.2019	Date of first issue: 30.06.2015	04.12.2019

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