

SAFETY DATA SHEET

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

KLÜBER
LUBRICATION

Klüberplex BE 31-222

Version	Revision Date:	Date of last issue: 22.11.2019	Print Date:
1.8	06.07.2020	Date of first issue: 10.11.2014	06.07.2020

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

1.1 Product identifier

Product name : Klüberplex BE 31-222

Article-No. : 017132

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

Use of the Sub-
stance/Mixture : Grease

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 Great Britain Limited
Unit 10 Pennine Business Park
Longbow Close
Huddersfield
West Yorkshire HD2 1GQ
Great Britain
Tel: +44-1422-205115
Fax: +44-1422-206073
sales@uk.klueber.com

Klüberplex BE 31-222=
LUB-KB2
Festo SE&Co. KG
Ruiter Strasse 82
D-73734 Esslingen
www.Festo.com/en/msds

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)

Not a hazardous substance or mixture.

SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version	Revision Date:	Date of last issue: 22.11.2019	Print Date:
1.8	06.07.2020	Date of first issue: 10.11.2014	06.07.2020

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

Additional Labelling

EUH210 Safety data sheet available on request.

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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Mineral oil.
special calcium soap

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration limits M-Factor Notes	Concentration (% w/w)
1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol	939-692-2 01-2119983498-16-XXXX	Aquatic Chronic3; H412		>= 1 - < 2.5

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 breathing is irregular or stopped, administer artificial respiration.

In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
Wash off with soap and water.

SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version 1.8	Revision Date: 06.07.2020	Date of last issue: 22.11.2019 Date of first issue: 10.11.2014	Print Date: 06.07.2020
----------------	------------------------------	---	---------------------------

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 : Move the victim to fresh air.
Do not induce vomiting without medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

Risks : None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No information available.

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
Metal oxides
Nitrogen oxides (NOx)
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.

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

SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version	Revision Date:	Date of last issue: 22.11.2019	Print Date:
1.8	06.07.2020	Date of first issue: 10.11.2014	06.07.2020

(dust).
Do not breathe vapours, aerosols.
Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions : Try to prevent the material from entering drains or water courses.
Local authorities should be advised if significant spillages cannot be contained.

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 : 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.

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.

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

Contains no substances with occupational exposure limit values.

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

SAFETY DATA SHEET

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

KLÜBER
LUBRICATION

Klüberplex BE 31-222

Version 1.8 Revision Date: 06.07.2020 Date of last issue: 22.11.2019
Date of first issue: 10.11.2014

Print Date:
06.07.2020

Substance name	End Use	Exposure routes	Potential health effects	Value
distillates (petroleum), hydrotreated heavy paraffinic	Workers	Inhalation	Long-term local effects	5.6 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
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

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

Substance name	Environmental Compartment	Value
distillates (petroleum), hydrotreated heavy paraffinic	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
	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
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

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

SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version 1.8	Revision Date: 06.07.2020	Date of last issue: 22.11.2019 Date of first issue: 10.11.2014	Print Date: 06.07.2020
----------------	------------------------------	---	---------------------------

- Remarks : For prolonged or repeated contact use 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 : beige
- Odour : characteristic
- Odour Threshold : No data available
- pH : No data available
- 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 : No data available

SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version 1.8	Revision Date: 06.07.2020	Date of last issue: 22.11.2019 Date of first issue: 10.11.2014	Print Date: 06.07.2020
----------------	------------------------------	---	---------------------------

flammability limit

Vapour pressure : < 0.01 hPa (20 °C)

Relative vapour density : No data available

Density : 0.96 g/cm³
(20 °C)

Bulk density : No data available

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 : No data available

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

SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version	Revision Date:	Date of last issue: 22.11.2019	Print Date:
1.8	06.07.2020	Date of first issue: 10.11.2014	06.07.2020

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

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

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

Components:

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.

Skin corrosion/irritation

Product:

Remarks : This information is not available.

SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version	Revision Date:	Date of last issue: 22.11.2019	Print Date:
1.8	06.07.2020	Date of first issue: 10.11.2014	06.07.2020

Components:

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

Serious eye damage/eye irritation

Product:

Remarks : This information is not available.

Components:

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

Respiratory or skin sensitisation

Product:

Remarks : This information is not available.

Components:

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.

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

Components:

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 - GB



Klüberplex BE 31-222

Version 1.8	Revision Date: 06.07.2020	Date of last issue: 22.11.2019 Date of first issue: 10.11.2014	Print Date: 06.07.2020
----------------	------------------------------	---	---------------------------

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.

Carcinogenicity

Product:

Remarks : No data available

Components:

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

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:

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.

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

SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version	Revision Date:	Date of last issue: 22.11.2019	Print Date:
1.8	06.07.2020	Date of first issue: 10.11.2014	06.07.2020

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.

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.

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.

Aspiration toxicity

Product:

This information is not available.

Further information

Product:

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

SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version 1.8	Revision Date: 06.07.2020	Date of last issue: 22.11.2019 Date of first issue: 10.11.2014	Print Date: 06.07.2020
----------------	------------------------------	---	---------------------------

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: No data available

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

Components:

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

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.

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Physico-chemical removability : Remarks: No data available

Components:

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 - GB



Klüberplex BE 31-222

Version 1.8	Revision Date: 06.07.2020	Date of last issue: 22.11.2019 Date of first issue: 10.11.2014	Print Date: 06.07.2020
----------------	------------------------------	---	---------------------------

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

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:

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)

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..

12.6 Other adverse effects

Product:

Additional ecological information : No information on ecology is available.

SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version	Revision Date:	Date of last issue: 22.11.2019	Print Date:
1.8	06.07.2020	Date of first issue: 10.11.2014	06.07.2020

SECTION 13: Disposal considerations

13.1 Waste treatment methods

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

- ADR : Not regulated as a dangerous good
- IMDG : Not regulated as a dangerous good
- IATA : Not regulated as a dangerous good

14.2 UN proper shipping name

- ADR : Not regulated as a dangerous good
- IMDG : Not regulated as a dangerous good
- IATA : Not regulated as a dangerous good

14.3 Transport hazard class(es)

- ADR : Not regulated as a dangerous good
- IMDG : Not regulated as a dangerous good
- IATA : Not regulated as a dangerous good

14.4 Packing group

- ADR : Not regulated as a dangerous good
- IMDG : Not regulated as a dangerous good

SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version 1.8	Revision Date: 06.07.2020	Date of last issue: 22.11.2019 Date of first issue: 10.11.2014	Print Date: 06.07.2020
----------------	------------------------------	---	---------------------------

IATA (Cargo) : Not regulated as a dangerous good

IATA (Passenger) : Not regulated as a dangerous good

14.5 Environmental hazards

ADR : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA (Passenger) : Not regulated as a dangerous good

IATA (Cargo) : Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

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 (EU) 2019/1021 on persistent organic pollutants (recast) : 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

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Not applicable

SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version	Revision Date:	Date of last issue: 22.11.2019	Print Date:
1.8	06.07.2020	Date of first issue: 10.11.2014	06.07.2020

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements

H412 : Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

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

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SAFETY DATA SHEET

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



Klüberplex BE 31-222

Version	Revision Date:	Date of last issue: 22.11.2019	Print Date:
1.8	06.07.2020	Date of first issue: 10.11.2014	06.07.2020

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