SYNGEAR SH-1150

Version	Revision Date:	Date of last issue: -	Print Date:
1.0	20.11.2025	Date of first issue: 20.11.2025	20.11.2025

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

1.1 Product identifier

Product name : SYNGEAR SH-1150

Article-No. : 340253

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

Use of the Substance/Mixture : Grease

Recommended restrictions on use : Restricted to professional users.

1.3 Details of the supplier of the safety data sheet

Company :
Klüber Lubrication NA LP
9010 County Road 2120
Tyler, Texas 75707
USA
Phone: +1 903 534 8021
Fax: +1 903 581 4376
info@us.kluber.com

Klüber Lubrication NA LP
32 Industrial Drive
Londonderry, NH 03053
USA
Phone: +1 603 647 4104
Fax: +1 603 647 4106
info@us.kluber.com

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

National contact :

1.4 Emergency telephone number

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

a brand of FREUDENBERG

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.

EUH208 Contains Reaction products of 2,5-dimercapto-1,3,4-thiadiazole, sodium salt, with 1-octanethiol and hydrogen peroxide. May produce an allergic reaction.

2.3 Other hazards

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

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

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Synthetic hydrocarbon oil
ester oil

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	specific concentration limit M-Factor Notes Acute toxicity estimate	Concentration (% w/w)
Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified	64742-55-8 265-158-7 649-468-00-3 01-2119487077-29-xxxx	Asp. Tox. 1; H304	Note L	>= 1 - < 10

Polysulfides, di-tert-Bu	68937-96-2 273-103-3 01-2119540515-43-XXXX	Skin Sens. 1B; H317 Aquatic Chronic 3; H412	>= 46 % Skin Sens.1B, H317	>= 0,25 - < 1
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)	931-384-6 01-2119493620-38-XXXX	Acute Tox. 4; H302 Eye Irrit. 2; H319 Skin Sens. 1B; H317 Aquatic Chronic 2; H411	> 50 % Eye Irrit.2, H319 > 9,39 % Skin Sens.1B, H317	>= 0,25 - < 1
Reaction products of 2,5-dimercapto-1,3,4-thiadiazole, sodium salt, with 1-octanethiol and hydrogen peroxide	948-020-7 01-2120792779-28-XXXX	Acute Tox. 4; H332 Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Chronic 4; H413		>= 0,1 - < 0,25

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	:	Move the victim to fresh air. If unconscious, place in recovery position and seek medical advice. Keep respiratory tract clear. Do NOT induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products	:	Carbon oxides Nitrogen oxides (NOx)

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 personal protective equipment.
Ensure adequate ventilation.
Do not breathe vapours or spray mist.
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.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

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 : Do not breathe vapours or spray mist.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Wash hands and face before breaks and immediately after handling the product.
Do not get in eyes or mouth or on skin.
Do not get on skin or clothing.
Do not ingest.
Do not repack.
Do not re-use empty containers.
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) : 10, Combustible liquids

7.3 Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified	64742-55-8	AGW (Vapour and aerosols)	5 mg/m3	DE TRGS 900 (2018-06-07)
	Peak-limit: excursion factor (category): 4;(II)			
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified	Workers	Inhalation	Long-term systemic effects	2,73 mg/m3
	Workers	Inhalation	Long-term local effects	5,58 mg/m3
	Workers	Skin contact	Long-term systemic effects	0,97 mg/kg bw/day
Polysulfides, di-tert-Bu	Workers	Inhalation	Long-term systemic effects	3,29 mg/m3
	Workers	Skin contact	Long-term systemic	4,67 mg/kg

			effects	
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)	Workers	Inhalation	Long-term systemic effects	8,56 mg/m3
	Workers	Skin contact	Long-term systemic effects	12,5 mg/kg
Reaction products of 2,5-dimercapto-1,3,4-thiadiazole, sodium salt, with 1-octanethiol and hydrogen peroxide	Workers	Inhalation	Long-term systemic effects	5,43 mg/m3
	Workers	Dermal	Long-term systemic effects	1,54 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified	Oral	9,33 mg/kg
Polysulfides, di-tert-Bu	Fresh water	0,00024 mg/l
	Marine water	0,000024 mg/l
	Intermittent use/release	0,0024 mg/l
	Sewage treatment plant	4,51 mg/l
	Fresh water sediment	0,94 mg/kg
	Marine sediment	0,094 mg/kg
	Soil	0,0181 mg/kg
Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)	Fresh water	0,0012 mg/l
	Marine water	0,00012 mg/l
	Intermittent use/release	0,064 mg/l
	Microbiological Activity in Sewage Treatment Systems	24,33 mg/l
	Fresh water sediment	3,13 mg/kg
	Marine sediment	0,313 mg/kg
	Soil	2,54 mg/kg
	Oral	10 mg/kg

8.2 Exposure controls

Engineering measures

none

Personal protective equipment

Eye/face protection : Safety glasses with side-shields

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.

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

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

Filter type : Filter type A-P

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

Environmental exposure controls

Air : Should not be released into the environment.
Exhaust air must be cleaned using approved equipment before returning it to the work place.

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

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour	:	yellow
Odour	:	sulphurous
Odour Threshold	:	No data available
Melting point/ range	:	No data available
Boiling point/boiling range	:	No data available
Flammability	:	Flammability (solid, gas): Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	>= 204 °C Method: open cup
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
pH	:	Not applicable
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	1.513 mm2/s (40 °C)
Solubility(ies)		
Water solubility	:	insoluble

Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	< 0,001 hPa (20 °C)
Relative density	:	0,883 (20 °C) Reference substance: Water The value is calculated
Density	:	0,88 g/cm3 (20 °C)
Bulk density	:	No data available
Relative vapour density	:	No data available

9.2 Other information

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

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

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

Acute toxicity

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

Product:

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

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

Acute dermal toxicity : Symptoms: Redness, Local irritation

Components:

Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified:

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

Acute inhalation toxicity : LC50 (Rat): > 5,53 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
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

Polysulfides, di-tert-Bu:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 401
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

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

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

Reaction products of 2,5-dimercapto-1,3,4-thiadiazole, sodium salt, with 1-octanethiol and hydrogen peroxide:

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

Acute inhalation toxicity : LC50 (Rat): 3,08 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: yes

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: no

Skin corrosion/irritation

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

Product:

Remarks : This information is not available.

Components:

Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified:

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

Polysulfides, di-tert-Bu:

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

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

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

Reaction products of 2,5-dimercapto-1,3,4-thiadiazole, sodium salt, with 1-octanethiol and hydrogen peroxide:

Species	:	Rabbit
Assessment	:	Irritating to skin.
Method	:	OECD Test Guideline 404
Result	:	Irritating to skin.
GLP	:	yes

Serious eye damage/eye irritation

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

Product:

Remarks	:	This information is not available.

Components:

Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified:

Species	:	Rabbit
Exposure time	:	48 h
Assessment	:	No eye irritation
Method	:	OECD Test Guideline 405
Result	:	No eye irritation
GLP	:	yes

Polysulfides, di-tert-Bu:

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

GLP : yes

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

Species : Rabbit
Assessment : Irritating to eyes.
Result : Irritating to eyes.

Reaction products of 2,5-dimercapto-1,3,4-thiadiazole, sodium salt, with 1-octanethiol and hydrogen peroxide:

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

Respiratory or skin sensitisation

Skin sensitisation

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

Respiratory sensitisation

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

Product:

Remarks : This information is not available.

Components:

Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified:

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.
GLP : no

Polysulfides, di-tert-Bu:

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.
GLP : yes

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

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

Reaction products of 2,5-dimercapto-1,3,4-thiadiazole, sodium salt, with 1-octanethiol and hydrogen peroxide:

Test Type	:	Buehler Test
Species	:	Guinea pig
Assessment	:	May cause sensitisation by skin contact.
Method	:	OECD Test Guideline 406
Result	:	May cause sensitisation by skin contact.
GLP	:	yes

Germ cell mutagenicity

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

Product:

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

Components:

Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified:

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

Polysulfides, di-tert-Bu:

Genotoxicity in vitro	:	Test Type: Ames test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

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

Reaction products of 2,5-dimercapto-1,3,4-thiadiazole, sodium salt, with 1-octanethiol and hydrogen peroxide:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: in vitro micronucleus test
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative
GLP: yes

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 490
Result: negative
GLP: yes

Carcinogenicity

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

Product:

Remarks : No data available

Components:

Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified:

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

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

Reproductive toxicity

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

Product:

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

Components:

Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified:

Reproductive toxicity - Assessment : - Fertility -

No toxicity to reproduction
- Teratogenicity -

No effects on or via lactation

Polysulfides, di-tert-Bu:

Reproductive toxicity - Assessment : - Fertility -

No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

Reproductive toxicity - Assessment : - Fertility -

No toxicity to reproduction
- Teratogenicity -

No toxicity to reproduction

STOT - single exposure

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

Product:

Remarks : No data available

Components:

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

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

STOT - repeated exposure

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

Product:

Remarks : No data available

Components:

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

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:

Polysulfides, di-tert-Bu:

Repeated dose toxicity - Assessment : No adverse effect has been observed in chronic toxicity tests.

Reaction products of 2,5-dimercapto-1,3,4-thiadiazole, sodium salt, with 1-octanethiol and hydrogen peroxide:

Species : Rat
NOAEL : 330 mg/kg
Application Route : oral (gavage)
Method : OECD Test Guideline 422
GLP : yes
Remarks : Not classified due to data which are conclusive although insufficient for classification.

Aspiration toxicity

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

Product:

This information is not available.

Components:

Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified:

May be fatal if swallowed and enters airways.

11.2 Information on other hazards

Endocrine disrupting properties

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

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according

to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

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

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: Harmful to aquatic organisms.

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:

Polysulfides, di-tert-Bu:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 0,088 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 63 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: No toxicity at the limit of solubility

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 8,5 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)): 91,4 mg/l Exposure time: 48 h Test Type: static test GLP: yes
Toxicity to microorganisms	:	EC50 (activated sludge): 2.433 mg/l Exposure time: 3 h Test Type: Respiration inhibition Method: OECD Test Guideline 209 GLP: yes
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,12 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)

Reaction products of 2,5-dimercapto-1,3,4-thiadiazole, sodium salt, with 1-octanethiol and hydrogen peroxide:

Toxicity to fish	:	LC50 (Fish): > 100 mg/l End point: mortality Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 GLP: yes
Toxicity to algae/aquatic plants	:	EC50 (algae): > 100 mg/l End point: Growth inhibition Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes
Toxicity to microorganisms	:	EC50 (activated sludge): > 1.000 mg/l Exposure time: 3 h Test Type: Respiration inhibition Analytical monitoring: yes Method: OECD Test Guideline 209 GLP: yes

Ecotoxicology Assessment

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

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Physico-chemical removability : Remarks: No data available

Components:

Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified:

Biodegradability : Result: not rapidly degradable
Biodegradation: 31 %
Exposure time: 28 d

Polysulfides, di-tert-Bu:

Biodegradability : Result: Not rapidly biodegradable
Biodegradation: 13 %
Exposure time: 28 d
Method: OECD Test Guideline 301

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

Biodegradability : Test Type: Primary biodegradation
Inoculum: activated sludge
Result: Not rapidly biodegradable
Biodegradation: 7,4 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Reaction products of 2,5-dimercapto-1,3,4-thiadiazole, sodium salt, with 1-octanethiol and hydrogen peroxide:

Biodegradability : Result: Not rapidly biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
GLP: yes

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified:

Partition coefficient: n-octanol/water : Pow: > 6
Remarks: Information given is based on data obtained from similar substances.

Polysulfides, di-tert-Bu:

Partition coefficient: n-octanol/water : log Pow: 5,6 (20 °C)
pH: 7
Method: OECD Test Guideline 117
GLP: yes

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)
Exposure time: 35 d
Bioconcentration factor (BCF): 432
Method: OECD Test Guideline 305

Partition coefficient: n-octanol/water : log Pow: > 4

Reaction products of 2,5-dimercapto-1,3,4-thiadiazole, sodium salt, with 1-octanethiol and hydrogen peroxide:

Partition coefficient: n-octanol/water : log Pow: > 6,5

12.4 Mobility in soil

Product:

Mobility : Remarks: No data available

Distribution among environmental compartments : Remarks: No data available

12.5 Results of PBT and vPvB assessment

Product:

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

Components:

Distillates (petroleum), hydrotreated light paraffinic; Baseoil — unspecified:

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

Reaction products of bis(4-methylpentan-2-yl)dithiophosphoric acid with phosphorus oxide, propylene oxide and amines, C12-14-alkyl (branched)

:

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

12.6 Endocrine disrupting properties

Product:

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

12.7 Other adverse effects

Product:

Additional ecological information : No information on ecology is available.

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:

Waste Code : used product, unused product

12 01 12*, spent waxes and fats

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

SECTION 14: Transport information

14.1 UN number or ID number

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	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

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	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)

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.4 Packing group

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA (Cargo)	:	Not regulated as a dangerous good
IATA (Passenger)	:	Not regulated as a dangerous good

14.5 Environmental hazards

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). (EU SVHC)	:	This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).
Regulation (EU) No 2024/590 on substances that deplete the ozone layer (EC 2024/590)	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast) (EU POP)	:	Not applicable
Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals (EU PIC)	:	Not applicable
REACH - List of substances subject to authorisation	:	Not applicable

(Annex XIV)
(EU. REACH-Annex XIV)

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	Not applicable

Water hazard class (Germany)	:	WGK 2 obviously hazardous to water Classification according to AwSV, Annex 1 (5.2)
TA Luft List (Germany)	:	5.2.1: Total dust: others: 0,36 % 5.2.5: Organic Substances: Class 1: 48,26 %
Volatile organic compounds	:	Directive 2010/75/EU of 24 November 2010 on industrial and livestock rearing emissions (integrated pollution prevention and control) Volatile organic compounds (VOC) content: 0,94 %

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements

H302	:	Harmful if swallowed.
H304	:	May be fatal if swallowed and enters airways.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H319	:	Causes serious eye irritation.
H332	:	Harmful if inhaled.
H411	:	Toxic to aquatic life with long lasting effects.

H412	:	Harmful to aquatic life with long lasting effects.
H413	:	May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Asp. Tox.	:	Aspiration hazard
Eye Irrit.	:	Eye irritation
Note L	:	The harmonised classification as a carcinogen applies unless it can be shown that the substance contains less than 3 % of dimethyl sulphoxide extract as measured by IP 346 (“Determination of polycyclic aromatics in unused lubricating base oils and asphaltene free petroleum fractions - Dimethyl sulphoxide extraction refractive index method”Institute of Petroleum, London), in which case a classification in accordance with Title II of this Regulation shall be performed also for that hazard class.
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
DE TRGS 900 / AGW	:	Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very

High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

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

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