NTN SNR Anti Fretting Paste

Version 2.0 Revision Date 30.06.2015 Print Date 30.06.2015

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : Anti Fretting Paste

Article-No. : 005108

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

Use of the Substance/Mixture : Lubricant

Recommended restrictions on use : Restricted to professional users.

1.3 Details of the supplier of the safety data sheet

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74000 ANNECY FRANCE
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Responsible/issuing person Service Laboratoire NTN-SNR Roulements

1.4 Emergency telephone number

Tel. urgence (Heure bureau) : +33 (0)4 50 65 97 55
Emergency Tel.(France) ORFILA (INRS) : +33 (0)1 45 42 59 59

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Chronic aquatic toxicity, Category 2	H411: Toxic to aquatic life with long lasting effects.

Classification (67/548/EEC, 1999/45/EC)

Harmful	R20/22: Harmful by inhalation and if swallowed.
Dangerous for the environment	R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic

environment.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Hazard statements : H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P273 Avoid release to the environment.

Additional Labelling:

EUH208 Contains: N-alkylated benzotriazoleMay produce an allergic reaction.

2.3 Other hazards

3. Composition/information on ingredients

3.2 Mixtures

Chemical nature : polyalkylene glycol oil
lithium soap
solid lubricant

Hazardous components

Chemical Name	CAS-No. EC-No. Index-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
trizinc bis(orthophosphate)	7779-90-0 231-944-3 030-011-00-6 / 01-2119485044-40-XXXX	N; R50/53	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 10 - < 20
antimony compounds	15890-25-2 240-028-2 051-003-00-9	Xn; R20/22 N; R51/53	Acute Tox. 4; H302 Acute Tox. 4; H332 Aquatic Chronic 2; H411	>= 1.682 - < 2.5
2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole	59656-20-1 261-844-5	R52/53	Aquatic Chronic 3; H412	>= 1 - < 2.5
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	68411-46-1 270-128-1	R52/53	Aquatic Chronic 3; H412	>= 1 - < 2.5
zinc oxide	1314-13-2	N; R50/53	Aquatic Acute 1;	>= 0.25 - < 1

	215-222-5 030-013-00-7 / 01-2119463881-XXXX		H400 Aquatic Chronic 1; H410	
2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol	95-38-5 202-414-9	Xn; R22-R48/22 C; R34 N; R50/53	Acute Tox. 4; H302 Skin Corr. 1C; H314 Eye Dam. 1; H318 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 0.25 - < 1
N-alkylated benzotriazole	94270-86-7	Xi; R38 Xi; R43 N; R50/53	Skin Irrit. 2; H315 Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 2; H411	>= 0.1 - < 0.25
Substances with a workplace exposure limit :				
titanium dioxide	13463-67-7 236-675-5			>= 10 - < 20

For the full text of the R-phrases mentioned in this Section, see Section 16.
For the full text of the H-Statements mentioned in this Section, see Section 16.

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.
Seek medical advice.

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.
Obtain medical attention.
Never give anything by mouth to an unconscious person.

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.

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Fire may cause evolution of:
Carbon oxides
Halogenated compounds
Metal oxides
Nitrogen oxides (NOx)
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.
In the case of respirable dust and/or fumes, use self-contained breathing apparatus.
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.

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).
Avoid breathing dust.
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.

6.3 Methods and materials 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.

7. Handling and storage

7.1 Precautions for safe handling

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

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)

: Consult the technical guidelines for the use of this substance/mixture.

8. Exposure controls/personal protection

8.1 Control parameters

Components	CAS-No.	Value type	Control parameters	Update	Basis
titanium dioxide	13463-67-7	TWA	10 mg/m3	2011-12-01	GB EH40
Further information:	15: For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m-3 8-hour TWA of inhalable dust or 4 mg.m-3 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit. Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/3. Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used				
titanium dioxide	13463-67-7	TWA	4 mg/m3	2011-12-01	GB EH40
Further information:	15: For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m-3 8-hour TWA of inhalable dust or 4 mg.m-3 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit. Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed 'inhalable' and 'respirable'. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/3. Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used				
antimony compounds	15890-25-2	TWA	0.5 mg/m3	2005-04-06	GB EH40
Further information:	2: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used antimony				

DNEL

trizinc bis(orthophosphate) : End Use: Workers
Exposure routes: Inhalation

Potential health effects: Long-term systemic effects
Value: 5 mg/m3

End Use: Workers
Exposure routes: Skin contact
Potential health effects: Long-term systemic effects
Value: 83 mg/kg

2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole : End Use: Industrial use
Exposure routes: Inhalation
Potential health effects: Acute systemic effects
Value: 1087 mg/m3

End Use: Industrial use
Exposure routes: Skin contact
Potential health effects: Long-term systemic effects
Value: 6.25 mg/kg

End Use: Industrial use
Exposure routes: Skin contact
Potential health effects: Acute systemic effects
Value: 3125 mg/kg

zinc oxide : End Use: Workers
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 5 mg/m3

End Use: Workers
Exposure routes: Inhalation
Potential health effects: Long-term local effects
Value: 0.5 mg/m3

End Use: Workers
Exposure routes: Skin contact
Potential health effects: Long-term systemic effects
Value: 83 mg/kg

2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol : End Use: Workers
Exposure routes: Skin contact
Potential health effects: Long-term exposure, Systemic effects
Value: 0.6 mg/kg

End Use: Workers
Exposure routes: Inhalation
Potential health effects: Long-term exposure, Systemic effects
Value: 0.46 mg/m3

End Use: Workers
Exposure routes: Skin contact
Potential health effects: Short-term exposure, Systemic effects
Value: 2 mg/kg

End Use: Workers
Exposure routes: Inhalation
Potential health effects: Short-term exposure, Systemic effects

Value: 14 mg/m3

N-alkylated benzotriazole : End Use: Industrial use
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 1.3 mg/m3

End Use: Industrial use
Exposure routes: Skin contact
Potential health effects: Long-term systemic effects
Value: 0.4 mg/kg

PNEC
trizinc bis(orthophosphate) : Fresh water
Value: 0.0206 mg/l

Marine water
Value: 0.0061 mg/l

Microbiological Activity in Sewage Treatment Systems
Value: 0.100 mg/l

Fresh water sediment
Value: 117.8 mg/kg

Marine sediment
Value: 56.5 mg/kg

Soil
Value: 35.6 mg/kg

zinc oxide : Fresh water
Value: 0.0206 mg/l

Marine water
Value: 0.0061 mg/l

Microbiological Activity in Sewage Treatment Systems
Value: 0.100 mg/l

Fresh water sediment
Value: 117.8 mg/kg

Marine sediment
Value: 56.5 mg/kg

Soil
Value: 35.6 mg/kg

2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol : Fresh water
Value: 0.00003 mg/l

Marine water
Value: 0.000003 mg/l

Fresh water sediment
Value: 0.376 mg/kg

Marine sediment
Value: 0.0376 mg/kg

Soil
Value: 0.075 mg/kg

N-alkylated benzotriazole : Fresh water
Value: 0.000976 mg/l

Marine water
Value: 0.000098 mg/l

Intermittent use/release
Value: 0.00976 mg/l

Soil
Value: 0.00184 - 0.842 mg/kg

Fresh water sediment
Value: 0.0121 - 4.23 mg/kg

Marine sediment
Value: 0.00121 - 0.423 mg/kg

Microbiological Activity in Sewage Treatment Systems
Value: 0.69 mg/l

8.2 Exposure controls

Engineering measures

Handle only in a place equipped with local exhaust (or other appropriate exhaust).

Personal protective equipment

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

Hand protection : For prolonged or repeated contact use protective gloves.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
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.
In case of contact through splashing:

: Nitrile rubber
Protective index Class 1

Eye protection : Tightly fitting safety goggles
Safety glasses with side-shields conforming to EN166

Hygiene measures : Wash face, hands and any exposed skin thoroughly after

handling.

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.

Environmental exposure controls

General advice	:	Do not allow contact with soil, surface or ground water. If the product contaminates rivers and lakes or drains inform respective authorities.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	:	paste
Colour	:	white
Odour	:	characteristic
Odour Threshold	:	No data available
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)	:	No data available Combustible Solids
Lower explosion limit	:	No data available
Upper explosion limit	:	No data available
Vapour pressure	:	< 0.001 hPa, 20 °C
Relative vapour density	:	No data available
Density	:	1.23 g/cm3, 20 °C
Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Ignition temperature	:	No data available
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Oxidizing properties	:	No data available

9.2 Other information

Sublimation point	:	not applicable
Bulk density	:	not applicable

10. Stability and reactivity

10.1 Reactivity

No hazards to be specially mentioned.

10.2 Chemical stability

No decomposition if stored and applied as directed.

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 pyrolysis products.

11. Toxicological information

11.1 Information on toxicological effects

Product

Acute oral toxicity	:	Acute toxicity estimate: > 2,000 mg/kg, Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: > 5 mg/l, 4 h, dust/mist, Calculation method
Skin corrosion/irritation	:	This information is not available.
Serious eye damage/eye irritation	:	This information is not available.
Respiratory or skin sensitisation	:	This information is not available.
Germ cell mutagenicity		
Genotoxicity in vitro	:	No data available
Genotoxicity in vivo	:	No data available
Carcinogenicity	:	No data available
Reproductive toxicity	:	No data available
Teratogenicity	:	No data available
Repeated dose toxicity	:	This information is not available.

Aspiration toxicity	:	This information is not available.
Further information	:	Information given is based on data on the components and the toxicology of similar products.

Components:

trizinc bis(orthophosphate) :

Acute oral toxicity	:	LD50: > 5,000 mg/kg, rat, OECD Test Guideline 401
Skin corrosion/irritation	:	Result: No skin irritation, Classification: No skin irritation
Serious eye damage/eye irritation	:	Result: No eye irritation, Classification: No eye irritation
Respiratory or skin sensitisation	:	Result: Does not cause skin sensitisation., Classification: Does not cause skin sensitisation.

antimony compounds :

Acute oral toxicity	:	LD50: > 300 - 2,000 mg/kg, rat, The component/mixture is moderately toxic after single ingestion.
Acute inhalation toxicity	:	LC50: > 2 mg/l, 4 h, rat, dust/mist, The component/mixture is moderately toxic after short term inhalation.
Skin corrosion/irritation	:	rabbit, slight irritation
Serious eye damage/eye irritation	:	rabbit, Moderate eye irritation

2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole :

Acute oral toxicity	:	LD50: > 5,000 mg/kg, rat, OECD Test Guideline 401
Acute dermal toxicity	:	LD50: > 2,000 mg/kg, rat, OECD Test Guideline 402
Skin corrosion/irritation	:	rabbit, Result: No skin irritation, Classification: No skin irritation, OECD Test Guideline 404
Serious eye damage/eye irritation	:	rabbit, Result: No eye irritation, Classification: No eye irritation, OECD Test Guideline 405
Respiratory or skin sensitisation	:	Buehler Test, guinea pig, Result: Did not cause sensitisation on laboratory animals., Classification: Did not cause sensitisation on laboratory animals., OECD Test Guideline 406
Germ cell mutagenicity		
Assessment	:	Animal testing did not show any mutagenic effects.

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene :

Acute oral toxicity	:	LD50: > 5,000 mg/kg, rat, OECD Test Guideline 401
Acute dermal toxicity	:	LD50: > 2,000 mg/kg, rat, OECD Test Guideline 402
Skin corrosion/irritation	:	rabbit, Result: No skin irritation, Classification: No skin irritation
Serious eye damage/eye irritation	:	rabbit, Result: No eye irritation, Classification: No eye irritation

Respiratory or skin sensitisation	:	guinea pig, Result: Does not cause skin sensitisation., Classification: Does not cause skin sensitisation., OECD Test Guideline 406

zinc oxide :

Acute oral toxicity	:	LD50: > 5,000 mg/kg, rat, OECD Test Guideline 401
Acute inhalation toxicity	:	LC50: > 5.7 mg/l, 4 h, rat, dust/mist, OECD Test Guideline 403, The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50: > 2,000 mg/kg, rat, OECD Test Guideline 402, GLP: yes
Skin corrosion/irritation	:	rabbit, Result: No skin irritation, Classification: No skin irritation, OECD Test Guideline 404
Serious eye damage/eye irritation	:	rabbit, Result: No eye irritation, Classification: No eye irritation, OECD Test Guideline 405, GLP: yes
Respiratory or skin sensitisation	:	Maximisation Test (GPMT), guinea pig, Result: Does not cause skin sensitisation., Classification: Does not cause skin sensitisation., OECD Test Guideline 406

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

Acute oral toxicity	:	LD50: 1,265 mg/kg, rat, OECD Test Guideline 401, GLP: yes
Acute dermal toxicity	:	LD50: > 2,000 mg/kg, rabbit
Skin corrosion/irritation	:	rabbit, Result: Corrosive, category 1C - where responses occur after exposures between 1 hour and 4 hours and observations up to 14 days., Classification: Causes burns., OECD Test Guideline 404, GLP: yes
Serious eye damage/eye irritation	:	rabbit, Result: Corrosive, Classification: Corrosive, OECD Test Guideline 405
Respiratory or skin sensitisation	:	guinea pig, Result: Does not cause skin sensitisation., Classification: Does not cause skin sensitisation., OECD Test Guideline 406
Repeated dose toxicity	:	rat, Oral, 100 mg/kg, NOAEL: 20 mg/kg
STOT - repeated exposure	:	Exposure routes: Ingestion Target Organs: Digestive organs, thymus gland Assessment: May cause damage to organs through prolonged or repeated exposure.

N-alkylated benzotriazole :

Acute oral toxicity	:	LD50: 3,313 mg/kg, rat, OECD Test Guideline 401
Acute dermal toxicity	:	LD50: > 2,000 mg/kg, rat, OECD Test Guideline 402
Skin corrosion/irritation	:	rabbit, Result: Irritating to skin., Classification: Irritating to skin., Draize Test
Serious eye damage/eye irritation	:	rabbit, Result: No eye irritation, Classification: No eye irritation, Draize Test
Respiratory or skin sensitisation	:	Maximisation Test (GPMT), guinea pig, Result: The product is a skin sensitiser, sub-category 1B., Classification: The product is a skin sensitiser, sub-category 1B., OECD Test Guideline

406

Germ cell mutagenicity

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

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

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

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

Aspiration toxicity : No aspiration toxicity classification

titanium dioxide :

Acute oral toxicity : LD50: > 10,000 mg/kg, rat

Acute dermal toxicity : LD50: > 10,000 mg/kg, rabbit

12. Ecological information

12.1 Toxicity

Product:

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

Toxicity to daphnia and other aquatic invertebrates : No data available

Toxicity to algae : No data available

Toxicity to bacteria : No data available

Components:

trizinc bis(orthophosphate) :

Toxicity to fish : LC50: > 0.14 mg/l, 96 h, Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates : EC50: > 1.08 mg/l, 48 h, Daphnia magna (Water flea), static test, OECD Test Guideline 202, GLP: yes

Toxicity to algae : EC50: > 0.136 mg/l, 72 h, Pseudokirchneriella subcapitata (green algae), OECD Test Guideline 201

M-Factor : 1

antimony compounds :

Ecotoxicology Assessment

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

2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole :

Toxicity to fish	:	LC50: > 1,000 mg/l, 96 h, Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates	:	EC50: 41 mg/l, 48 h, Daphnia magna (Water flea), OECD Test Guideline 202
Toxicity to algae	:	EC50: > 100 mg/l, 72 h, Pseudokirchneriella subcapitata (green algae), Growth inhibition, OECD Test Guideline 201

Ecotoxicology Assessment

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

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene :

Toxicity to fish	:	LC50: > 100 mg/l, 96 h, Danio rerio (zebra fish), OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50: 51 mg/l, 48 h, Daphnia magna (Water flea), Immobilization, OECD 202 T1

Ecotoxicology Assessment

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

zinc oxide :

Toxicity to fish	:	LC50: 1.55 mg/l, 96 h, Danio rerio (zebra fish), static test
Toxicity to daphnia and other aquatic invertebrates	:	EC50: 1 mg/l, 48 h, Daphnia magna (Water flea), static test, OECD Test Guideline 202
Toxicity to algae	:	EC50: 0.136 mg/l, 72 h, Pseudokirchneriella subcapitata (green algae), static test, OECD Test Guideline 201, GLP: yes
M-Factor	:	1

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

Toxicity to fish	:	LC50: 0.3 mg/l, 96 h, Danio rerio (zebra fish), static test, OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50: 0.136 mg/l, 48 h, Daphnia magna (Water flea), Immobilization, OECD Test Guideline 202, GLP: yes
Toxicity to algae	:	ErC50: 0.03 mg/l, 72 h, Desmodesmus subspicatus (green algae), Growth inhibition, OECD Test Guideline 201
M-Factor	:	10

Toxicity to bacteria	:	EC50: 26 mg/l, 3 h, activated sludge, Respiration inhibition, OECD 209

N-alkylated benzotriazole :

Toxicity to fish	:	LC50: 1.3 mg/l, 96 h, Brachydanio rerio (zebrafish), static test, OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50: 2.05 mg/l, 48 h, Daphnia magna (Water flea), static test, OECD 202 T1
Toxicity to algae	:	EC50: 0.976 mg/l, 72 h, Desmodesmus subspicatus (green algae), static test, OECD Test Guideline 201
M-Factor	:	1
Toxicity to bacteria	:	EC20: 15 mg/l, 3 h, activated sludge, Respiration inhibition, OECD 209

Ecotoxicology Assessment

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

12.2 Persistence and degradability

Product:

Biodegradability	:	No data available
Physico-chemical removability	:	No data available

Components:

trizinc bis(orthophosphate) :

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

2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole :

Biodegradability	:	Primary biodegradation, Result: Not readily biodegradable., OECD Test Guideline 301C

zinc oxide :

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

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

Biodegradability	:	Primary biodegradation, Result: not rapidly biodegradable, OECD 301 B

N-alkylated benzotriazole :

Biodegradability	:	Primary biodegradation, < 10 %, Result: not rapidly biodegradable, Exposure time: 28 d, activated sludge, OECD 301 B

12.3 Bioaccumulative potential

Product:

Bioaccumulation : This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)., This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Components:

2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole :

Bioaccumulation : Fish, Bioconcentration factor (BCF): 3.16

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene :

Bioaccumulation : Due to the distribution coefficient n-octanol/water, accumulation in organisms is possible.

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

Bioaccumulation : Bioconcentration factor (BCF): 371.8, Does not accumulate in organisms.

N-alkylated benzotriazole :

Bioaccumulation : Bioaccumulation is unlikely.

12.4 Mobility in soil

Product:

Mobility : No data available

Distribution among environmental compartments : No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)., This mixture contains no substance considered to be very persistent nor 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.

Components:

trizinc bis(orthophosphate) :

Assessment : not applicable

2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole :

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

zinc oxide :

Assessment : not applicable

N-alkylated benzotriazole :

Assessment : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

Product:

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

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	:	Empty containers can be landfilled, when in accordance with the local regulations.

14. Transport information

14.1 UN number

ADR	:	3077
IMDG	:	3077
IATA	:	3077

14.2 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

ADR	:	9
IMDG	:	9
IATA	:	9

14.4 Packing group

ADR

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

IMDG

Packaging group	:	III
Labels	:	9
EmS Number	:	F-A, S-F

IATA

Packing instruction (cargo aircraft)	:	956
Packaging group	:	III
Labels	:	9

14.5 Environmental hazards

ADR

Environmentally hazardous : yes

IMDG
Marine pollutant : yes
IATA
Environmentally hazardous : yes

14.6 Special precautions for user
No data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not available

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).
Major Accident Hazard Legislation	:	96/82/EC Update: Dangerous for the environment 9b Quantity 1: 200 t Quantity 2: 500 t

15.2 Chemical Safety Assessment
This information is not available.

16. Other information

Full text of R-phrases referred to under sections 2 and 3

R20/22	Harmful by inhalation and if swallowed.
R22	Harmful if swallowed.
R34	Causes burns.
R38	Irritating to skin.
R43	May cause sensitisation by skin contact.
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of H-Statements referred to under sections 2 and 3.

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.
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.

Further information