SYNGEAR PG-460F

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2.1	24.08.2026	Date of first issue: 05.06.2023	24.08.2026

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

1.1 Product identifier

Product name : SYNGEAR PG-460F

Article-No. : 340096

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

Use of the Substance/Mixture : Lubricating oil

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 : klna-productstewardship@klueber.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) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

a brand of FREUDENBERG

Long-term (chronic) aquatic hazard, Category 2 — H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard pictograms :

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

Precautionary statements :

Prevention:

P273 Avoid release to the environment.

Response:

P391 Collect spillage.

2.3 Other hazards

This substance/mixture contains components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB).

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : polyalkylene glycol 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)
O,O,O-triphenyl phosphorothioate	597-82-0 209-909-9	Aquatic Chronic 1; H410	M-Factor: /10	>= 0.25 - < 1
Amines, C12-14-alkyl, isooctyl phosphates	68187-67-7 269-119-5	Acute Tox. 4; H302 Acute Tox. 4;		>= 0.25 - < 1

		H312 Skin Corr. 1C; H314 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 2; H411 EUH071		
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	68411-46-1 270-128-1	Repr. 2; H361f Aquatic Chronic 3; H412		>= 0.25 - < 1
O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate	126019-82-7 406-940-1 015-171-00-7	Repr. 2; H361d Aquatic Chronic 2; H411		>= 0.25 - < 1

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled : Obtain medical attention.
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.
Get medical attention immediately if irritation develops and persists.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
Wash off immediately with plenty of water.

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.
Obtain medical attention.
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

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Exposure to decomposition products may be a hazard to health.

Further information : Standard procedure for chemical fires.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Evacuate personnel to safe areas.
Use 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.

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

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL)

Substance name	End Use	Exposure routes	Potential health effects	Value
O,O,O-triphenyl phosphorothioate	Workers	Inhalation	Long-term systemic effects	1.39 mg/m3
	Workers	Skin contact	Long-term systemic effects	0.4 mg/kg
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	Workers	Skin contact	Long-term systemic effects	0.44 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	0.31 mg/m3
O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate	Workers	Inhalation	Long-term systemic effects	1.76 mg/m3
	Workers	Skin contact	Long-term systemic effects	0.5 mg/kg

Predicted No Effect Concentration (PNEC)

Substance name	Environmental Compartment	Value
O,O,O-triphenyl phosphorothioate	Fresh water	0.00017 mg/l
	Marine water	0.000017 mg/l
	Fresh water sediment	3.47 mg/kg
	Marine sediment	0.347 mg/kg
	Soil	2.46 mg/kg
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	Fresh water	0.034 mg/l
	Marine water	0.003 mg/l
	Microbiological Activity in Sewage Treatment Systems	10 mg/l
	Fresh water sediment	0.446 mg/kg
	Marine sediment	0.045 mg/kg
	Soil	1.76 mg/kg
O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate	Fresh water sediment	0.1 mg/kg
	Marine sediment	0.01 mg/kg
	Soil	20 mg/kg

8.2 Exposure controls

Engineering measures

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

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.
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

Appearance

Physical state	:	liquid
Colour	:	colourless
Odour	:	mild
Odour Threshold	:	No data available
pH	:	Not applicable substance/mixture is non-polar/aprotic
Melting point/ range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	>= 232 °C Method: open cup
Evaporation rate	:	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
Vapour pressure	:	< 0.001 hPa (20 °C)
Relative vapour density	:	No data available
Relative density	:	1.048 (20 °C) Reference substance: Water The value is calculated
Density	:	1.05 g/cm3 (20 °C)
Bulk density	:	No data available

Solubility(ies)
Water solubility : soluble

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 : 463 mm2/s (40 °C)

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

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

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	:	Remarks: This information is not available.

Components:

O,O,O-triphenyl phosphorothioate:

Acute oral toxicity	:	LD50 (Rat): > 10,000 mg/kg Method: OECD Test Guideline 401
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity Remarks: No mortality observed at this dose.

Amines, C12-14-alkyl, isooctyl phosphates:

Acute oral toxicity	:	LD50 (Rat): 1,000 mg/kg Method: OECD Test Guideline 423 GLP: yes
Acute inhalation toxicity	:	Assessment: Corrosive to the respiratory tract.
Acute dermal toxicity	:	LD50 (Rabbit): 2,000 mg/kg Method: OECD Test Guideline 402 GLP: yes

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

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg Method: OECD Test Guideline 401
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 401 GLP: yes Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402 GLP: yes Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

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

Product:

Remarks	:	This information is not available.

Components:

O,O,O-triphenyl phosphorothioate:

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

Amines, C12-14-alkyl, isooctyl phosphates:

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

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

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

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

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

Serious eye damage/eye irritation

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

Product:

Remarks : This information is not available.

Components:

O,O,O-triphenyl phosphorothioate:

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

Amines, C12-14-alkyl, isooctyl phosphates:

Assessment : Risk of serious damage to eyes.
Result : Risk of serious damage to eyes.

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

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

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

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:

O,O,O-triphenyl phosphorothioate:

Assessment : Does not cause skin sensitisation.

Amines, C12-14-alkyl, isooctyl phosphates:

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	:	yes

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

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

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

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

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:

O,O,O-triphenyl phosphorothioate:

Germ cell mutagenicity-Assessment	:	Animal testing did not show any mutagenic effects.

Amines, C12-14-alkyl, isooctyl phosphates:

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

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

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 mammalian cell gene mutation test
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Chinese hamster (male and female)
Application Route: oral (gavage)
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Germ cell mutagenicity-Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

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

Product:

Remarks : No data available

Components:

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

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:

O,O,O-triphenyl phosphorothioate:

Reproductive toxicity - Assessment : - Fertility -

Animal testing did not show any effects on fertility.

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

Reproductive toxicity - Assessment : - Fertility -

Some evidence of adverse effects on sexual function and

fertility, based on animal experiments.

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

Effects on foetal development : Test Type: Developmental Toxicity
Species: Rat
Application Route: Oral
Developmental Toxicity: NOAEL: 150 mg/kg body weight
Method: OECD Test Guideline 414
Result: Some evidence of adverse effects on development, based on animal experiments.
GLP: yes
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : - Fertility -

Some evidence of adverse effects on development, based on animal experiments.

STOT - single exposure

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

Product:

Remarks : No data available

Components:

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

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:

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

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:

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

Species	:	Rat
NOAEL	:	1,000 mg/kg
Application Route	:	Oral
Exposure time	:	28 d
Method	:	OECD Test Guideline 407
GLP	:	yes

Species	:	Rat
NOAEL	:	50 mg/kg
Application Route	:	Oral
Exposure time	:	90 d
Number of exposures	:	daily
Method	:	OECD Test Guideline 408
GLP	:	yes
Remarks	:	Not classified due to data which are conclusive although insufficient for classification.

Aspiration hazard

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

Product:

This information is not available.

Components:

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

No aspiration toxicity classification

Endocrine disrupting properties

Product:

Assessment	:	This substance/mixture does not contain components considered to have endocrine disrupting properties for human health according to UK REACH Article 57(f), at levels of 0.1% or higher.

Further information

Product:

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

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	Remarks: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to algae/aquatic plants	:	Remarks: No data available
Toxicity to microorganisms	:	Remarks: No data available

Components:

O,O,O-triphenyl phosphorothioate:

Toxicity to fish	:	LC50 (Brachydanio rerio (zebrafish)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Test Type: Immobilization Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to microorganisms	:	EC50 (activated sludge): > 100 mg/l Exposure time: 3 h Method: OECD Test Guideline 209
Toxicity to fish (Chronic toxicity)	:	NOEC: 0.0017 mg/l Exposure time: 97 d Species: Oncorhynchus mykiss (rainbow trout) Test Type: flow-through test Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.00724 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 211
M-Factor (Chronic aquatic	:	10

toxicity)

Amines, C12-14-alkyl, isooctyl phosphates:

Toxicity to fish : LC0 (Danio rerio (zebra fish)): 1 mg/l
Exposure time: 96 h
Test Type: static test
Method: Regulation (EC) No. 440/2008, Annex, C.1
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 17 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): 0.8 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

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

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

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 51 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 25 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes
Toxicity to microorganisms	:	EC50 (activated sludge): > 100 mg/l Exposure time: 3 h Test Type: Respiration inhibition Method: OECD Test Guideline 209 GLP: yes

Ecotoxicology Assessment

Acute aquatic toxicity	:	Toxic to aquatic life.
Chronic aquatic toxicity	:	Toxic 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:

O,O,O-triphenyl phosphorothioate:

Biodegradability	:	Result: Not rapidly biodegradable

Amines, C12-14-alkyl, isooctyl phosphates:

Biodegradability	:	Result: Not rapidly biodegradable Biodegradation: 35 % Exposure time: 28 d Method: Directive 67/548/EEC Annex V, C.4.D. GLP: yes

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

Biodegradability	:	Test Type: aerobic Inoculum: activated sludge Result: Not rapidly biodegradable Biodegradation: 1 % Exposure time: 28 d Method: OECD Test Guideline 301B GLP: yes

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

Biodegradability : Test Type: Primary biodegradation
Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 2 - 4 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
GLP: yes

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

O,O,O-triphenyl phosphorothioate:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 56 d
Bioconcentration factor (BCF): 2,551

Partition coefficient: n-octanol/water : log Pow: 5.1 (20 °C)

Amines, C12-14-alkyl, isooctyl phosphates:

Partition coefficient: n-octanol/water : log Pow: 1.87
Method: OECD Test Guideline 117
GLP: yes

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

Partition coefficient: n-octanol/water : log Pow: 5.2 - 10.82

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 56 d
Concentration: 0.507 mg/l
Bioconcentration factor (BCF): 48
Method: OECD Test Guideline 305C
GLP: yes

Partition coefficient: n-octanol/water : log Pow: 20

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 components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB).

Components:

O,O,O-triphenyl phosphorothioate:

Assessment : PBT substance
Not very persistent and very bioaccumulative (vPvB).

O,O,O-tris(2(or 4)-C 9-10-isoalkylphenyl) phosphorothioate:

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

12.6 Other adverse effects

Product:

Endocrine disrupting potential : This substance/mixture does not contain components considered to have endocrine disrupting properties for environment according to UK REACH Article 57(f) at levels of 0.1% or higher.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Do not dispose of with domestic refuse.
Dispose of as hazardous waste in compliance with local and national regulations.

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.

Waste Code : unused product
13 02 06*, synthetic engine, gear and lubricating oils

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

SECTION 14: Transport information

14.1 UN number

ADR	:	UN 3082
RID	:	UN 3082
IMDG	:	UN 3082
IATA	:	UN 3082

14.2 UN proper shipping name

ADR	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (O,O,O-triphenyl phosphorothioate)
RID	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (O,O,O-triphenyl phosphorothioate)
IMDG	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (O,O,O-triphenyl phosphorothioate)
IATA	:	Environmentally hazardous substance, liquid, n.o.s. (O,O,O-triphenyl phosphorothioate)

14.3 Transport hazard class(es)

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

14.4 Packing group

ADR

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Tunnel restriction code	:	(-)

RID

Packing group	:	III

Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9

IMDG

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

IATA (Cargo)

Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous Dangerous Goods

IATA (Passenger)

Packing instruction (passenger aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous Dangerous Goods

14.5 Environmental hazards

ADR

Environmentally hazardous	:	yes

RID

Environmentally hazardous	:	yes

IMDG

Marine pollutant	:	yes

IATA (Passenger)

Environmentally hazardous	:	yes

IATA (Cargo)

Environmentally hazardous	:	yes

14.6 Special precautions for user

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

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

Remarks	:	Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

UK REACH List of restrictions (Annex 17)	:	Conditions of restriction for the following entries must be considered: Number on list 3
UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation (UK SVHC)	:	This product does not contain substances of very high concern (UK: The REACH etc. (Amendment) Regulations, Article 57).
The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain) (GB POPs)	:	Not applicable
Regulation (EU) No 2024/590 on substances that deplete the ozone layer (EC 2024/590)	:	Not applicable
UK REACH List of substances subject to authorisation (Annex XIV) (UK. REACH Annex XIV)	:	Not applicable
GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation (GB PIC)	:	Not applicable
The Control of Explosives Precursors and Poisons Regulations (Poisons Act, as amended) (GB Poisons Act)		Not applicable
Control of Major Accident Hazards Regulations 2015 (COMAH)	E2	ENVIRONMENTAL HAZARDS
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: 53.08 %

Other regulations:

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to new and expectant mothers at work contained in Regulation 16 to 18) and of the Pregnant Workers Directive 92/85/EEC.

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements

H302	:	Harmful if swallowed.
H312	:	Harmful in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H318	:	Causes serious eye damage.
H361d	:	Suspected of damaging the unborn child.
H361f	:	Suspected of damaging fertility.
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.
EUH071	:	Corrosive to the respiratory tract.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
PBT	:	Persistent, bioaccumulative and toxic
Repr.	:	Reproductive toxicity
Skin Corr.	:	Skin corrosion

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; BGW - Biological Limit Values; 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 Harmonised 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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); LSPN - List of Hazardous Notified Substances (Chile); 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 - Organisation 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; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Aquatic Chronic 2	H411	Calculation method

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

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