

# SAFETY DATA SHEET

## RUGBY® 10 ME (EW)



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

#### 1.1 Product identifier

**Product name** RUGBY® 10 ME (EW)

**Other means of identification**

**Product code** 50002157

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

Use of the Sub- : Can be used as insecticide only.  
stance/Mixture

Recommended restrictions : Use as recommended by the label.  
on use

#### 1.3 Details of the supplier of the safety data sheet

**Supplier Address**

FMC Chemicals (Pty) Ltd  
Company Registration No.: 1988/001451/07  
West End Office Park, Building C  
Cnr. West Ave & Hall Street  
Centurion  
0014  
South Africa

E-mail address: SDS-Info@fmc.com .

#### 1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:  
South Africa: 080-001-4676 (CHEMTREC)

Medical emergency:  
For any emergency or poisoning contact: Griffon Poison Infor-  
mation Centre (24 hrs) - +27-(0)-82-446-8946

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity, Category 4 H302: Harmful if swallowed.

Acute toxicity, Category 4 H332: Harmful if inhaled.

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Acute toxicity, Category 3	H311: Toxic in contact with skin.
Skin irritation, Category 2	H315: Causes skin irritation.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Specific target organ toxicity - single exposure, Category 2	H371: May cause damage to organs.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

### 2.2 Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 + H332 Harmful if swallowed or if inhaled.  
H311 Toxic in contact with skin.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H371 May cause damage to organs.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P260 Do not breathe mist or vapours.  
P264 Wash skin thoroughly after handling.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.  
**Response:**  
P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.  
P391 Collect spillage.

Hazardous components which must be listed on the label:  
Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester  
Naphthenic acids, copper salts

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### 2.3 Other hazards

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

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester	95465-99-9	Acute Tox. 2; H300 Acute Tox. 1; H330 Acute Tox. 1; H310 STOT SE 1; H370 (Nervous system) STOT RE 1; H372 (Nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 1,000 M-Factor (Chronic aquatic toxicity): 100	>= 2.5 - < 10
Tristyrylphenol ethoxylates	99734-09-5	Aquatic Chronic 3; H412	>= 2.5 - < 10
Naphthenic acids, copper salts	1338-02-9 215-657-0 029-003-00-5	Acute Tox. 3; H301 Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	>= 0.1 - < 0.25
2-ethylhexanoic acid, copper salt	22221-10-9 244-846-0	Acute Tox. 4; H312 Eye Dam. 1; H318 Repr. 2; H361 Aquatic Chronic 1; H410	>= 0.1 - < 0.25

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		M-Factor (Chronic aquatic toxicity): 1	

For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- |                            |  |
|----------------------------|--|
| General advice             | : Move out of dangerous area.<br>Consult a physician.<br>Show this safety data sheet to the doctor in attendance.<br>Symptoms of poisoning may appear several hours later.<br>Do not leave the victim unattended.  |
| Protection of first-aiders | : First Aid responders should pay attention to self-protection and use the recommended protective clothing<br>Avoid inhalation, ingestion and contact with skin and eyes.<br>If potential for exposure exists refer to Section 8 for specific personal protective equipment. |
| If inhaled                 | : Move to fresh air.<br>If unconscious, place in recovery position and seek medical advice.<br>If symptoms persist, call a physician.<br>If breathing has stopped, apply artificial respiration.   |
| In case of skin contact    | : Take victim immediately to hospital.<br>If on skin, rinse well with water.<br>If on clothes, remove clothes.   |
| In case of eye contact     | : Immediately flush eye(s) with plenty of water.<br>Remove contact lenses.<br>Protect unharmed eye.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist.  |
| If swallowed               | : Drink 1 or 2 glasses of water.<br>Induce vomiting, but only if victim is fully conscious.<br>Keep respiratory tract clear.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person.<br>Take victim immediately to hospital.   |

#### 4.2 Most important symptoms and effects, both acute and delayed

- |       |   |
|-------|---|
| Risks | : Harmful if swallowed or if inhaled.<br>Toxic in contact with skin.<br>Causes skin irritation.<br>Causes serious eye irritation. |
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May cause damage to organs.  
May cause damage to organs through prolonged or repeated exposure.

### 4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Dry chemical, CO<sub>2</sub>, water spray or regular foam.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : Do not spread spilled material with high-pressure water streams.  
High volume water jet

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Chlorine compounds  
Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)  
Oxides of phosphorus  
Sulphur oxides

### 5.3 Advice for firefighters

Special protective equipment for firefighters : Firefighters should wear protective clothing and self-contained breathing apparatus.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.  
For safety reasons in case of fire, cans should be stored separately in closed containments.  
Use a water spray to cool fully closed containers.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.  
Ensure adequate ventilation.  
If it can be safely done, stop the leak.  
Do not touch or walk through the spilled material.  
Never return spills in original containers for re-use.

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Only qualified personnel equipped with suitable protective equipment may intervene.  
Treat recovered material as described in the section "Disposal considerations".  
For disposal considerations see section 13.

**6.2 Environmental precautions**

Environmental precautions : Prevent product from entering drains.  
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).  
Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

See sections: 7, 8, 11, 12 and 13.

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Advice on safe handling : Avoid formation of aerosol.  
Do not breathe vapours/dust.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Provide sufficient air exchange and/or exhaust in work rooms.  
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.  
Keep away from open flames, hot surfaces and sources of ignition.

Hygiene measures : Avoid contact with skin, eyes and clothing. Do not breathe dust or spray mist. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

**7.2 Conditions for safe storage, including any incompatibilities**

Requirements for storage areas and containers : Prevent unauthorized access. No smoking. Keep in a well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe

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label precautions. Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

### 7.3 Specific end use(s)

Specific use(s) : Registered pesticide to be used in accordance with a label approved by country-specific regulatory authorities.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Personal protective equipment

Eye/face protection : Eye wash bottle with pure water  
Tightly fitting safety goggles  
Wear face-shield and protective suit for abnormal processing problems.

Hand protection  
Material : Protective gloves

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Protective measures : Plan first aid action before beginning work with this product.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	: liquid
Form	: liquid
Colour	: green
Odour	: characteristic
Odour Threshold	: No data available
pH	: No data available

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Melting point/ range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	> 79 °C Method: closed cup
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Density	:	No data available
Solubility(ies)	:	
Water solubility	:	emulsifiable
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	:	4.77 mm <sup>2</sup> /s (40 °C)
Explosive properties	:	
Not explosive	:	
Oxidizing properties	:	Non-oxidizing

### 9.2 Other information

Self-ignition	:	No data available
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No decomposition if stored and applied as directed.

### 10.2 Chemical stability

No decomposition if stored and applied as directed.

### 10.3 Possibility of hazardous reactions

Hazardous reactions	:	No decomposition if stored and applied as directed.
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Vapours may form explosive mixture with air.

### 10.4 Conditions to avoid

Conditions to avoid	:	Heat, flames and sparks.
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Avoid extreme temperatures  
Avoid formation of aerosol.

### 10.5 Incompatible materials

Materials to avoid	:	Avoid strong acids, bases, and oxidizers
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### 10.6 Hazardous decomposition products

No decomposition if used as directed.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Harmful if swallowed or if inhaled.  
Toxic in contact with skin.

#### Product:

Acute oral toxicity	: LD50 (Rat): 371 mg/kg
Acute inhalation toxicity	: LC50 (Rat): 2.02 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	: LD50 (Rat): 761 mg/kg

#### Components:

##### **Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:**

Acute oral toxicity	: LD50 (Rat, female): 34 - 51 mg/kg Method: US EPA Test Guideline OPP 81-1 Symptoms: Diarrhoea, hemorrhage  LD50 (Mouse): 71.4 mg/kg
Acute inhalation toxicity	: LC50 (Rat, male and female): 0.026 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: US EPA Test Guideline OPP 81-3 Symptoms: Breathing difficulties, Tremors
Acute dermal toxicity	: LD50 (Rabbit, male): 7 - 17 mg/kg Method: US EPA Test Guideline OPP 81-2  LD50 (Rabbit, female): 5 - 16 mg/kg Method: US EPA Test Guideline OPP 81-2

##### **Tristyrylphenol ethoxylates:**

Acute oral toxicity	: LD50 (Rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 401 Remarks: Based on data from similar materials
Acute dermal toxicity	: LD50 (Rat, male and female): > 2,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

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### **Naphthenic acids, copper salts:**

Acute oral toxicity : LD50 (Rat, male and female): 300 - 500 mg/kg  
Method: OECD Test Guideline 423  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit, male and female): 3,160 mg/kg  
Method: OECD Test Guideline 402  
Symptoms: Lethargy, Diarrhoea, anorexia  
Remarks: Based on data from similar materials

### **2-ethylhexanoic acid, copper salt:**

Acute oral toxicity : LD50 Oral (Rat, female): 2,043 mg/kg  
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat, male and female): 2,000 mg/kg  
Method: OECD Test Guideline 402

### **Skin corrosion/irritation**

Causes skin irritation.

### **Product:**

Assessment : Irritating to skin.

Remarks : May cause skin irritation in susceptible persons.

### **Components:**

#### **Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:**

Species : Rabbit  
Result : No skin irritation

#### **Tristyrylphenol ethoxylates:**

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

### **Naphthenic acids, copper salts:**

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

### **2-ethylhexanoic acid, copper salt:**

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

### **Serious eye damage/eye irritation**

Causes serious eye irritation.

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### **Product:**

Assessment : Irritating to eyes.

Remarks : May cause irreversible eye damage.

### **Components:**

#### **Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:**

Species : Rabbit

Method : Draize Test

Result : No eye irritation

#### **Tristyrylphenol ethoxylates:**

Species : Rabbit

Method : OECD Test Guideline 405

Result : No eye irritation

#### **Naphthenic acids, copper salts:**

Method : in vitro eye irritation test

Result : No eye irritation

#### **2-ethylhexanoic acid, copper salt:**

Species : Bovine cornea

Method : OECD Test Guideline 437

Result : Irreversible effects on the eye

### **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:**

Assessment : Not a skin sensitizer.

### **Components:**

#### **Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:**

Exposure routes : Skin contact

Species : Guinea pig

Result : Not a skin sensitizer.

#### **Naphthenic acids, copper salts:**

Test Type : Maximisation Test

Species : Guinea pig

Result : Causes sensitisation.

Remarks : Based on data from similar materials

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**2-ethylhexanoic acid, copper salt:**

Test Type	: Open epicutaneous test
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: Does not cause skin sensitisation.

**Germ cell mutagenicity**

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

**Components:****Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:**

Genotoxicity in vitro	: Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative
	Test Type: Ames test Metabolic activation: with and without metabolic activation Result: negative

**Tristyrylphenol ethoxylates:**

Genotoxicity in vitro	: Test Type: reverse mutation assay Method: OECD Test Guideline 471 Result: negative
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Genotoxicity in vivo	: Remarks: No data available
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**Naphthenic acids, copper salts:**

Genotoxicity in vitro	: Test Type: reverse mutation assay Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative
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Genotoxicity in vivo	: Test Type: Micronucleus test Species: Mouse (male and female) Application Route: Ingestion Exposure time: 48 h Method: Mutagenicity (micronucleus test) Result: negative Remarks: Based on data from similar materials
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**2-ethylhexanoic acid, copper salt:**

Genotoxicity in vitro	: Test Type: reverse mutation assay Method: Mutagenicity (Escherichia coli - reverse mutation assay) Result: negative GLP: yes
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Genotoxicity in vivo : Test Type: Micronucleus test  
Species: Mouse  
Application Route: Oral  
Method: Mutagenicity (micronucleus test)  
Result: negative

### **Carcinogenicity**

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

### **Components:**

#### **Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:**

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

### **Reproductive toxicity**

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

### **Components:**

#### **Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:**

Reproductive toxicity - Assessment : Animal testing showed no reproductive toxicity.  
Animal testing showed no developmental toxicity.

#### **Naphthenic acids, copper salts:**

Effects on fertility : Species: Rat, male and female  
Application Route: Ingestion  
Method: OECD Test Guideline 416  
Result: negative  
Remarks: Based on data from similar materials

Species: Rat, male and female  
Application Route: Ingestion  
General Toxicity F1: NOAEL: 100 mg/kg body weight  
Remarks: Based on data from similar materials

Effects on foetal development : Species: Rabbit  
Application Route: Ingestion  
General Toxicity Maternal: NOAEL: 7.5 mg/kg body weight  
Developmental Toxicity: NOAEL: 15 mg/kg body weight  
Target Organs: Stomach, Kidney  
Method: OECD Test Guideline 414  
Result: positive  
Remarks: Based on data from similar materials

#### **2-ethylhexanoic acid, copper salt:**

Effects on fertility : Test Type: reproductive and developmental toxicity study  
Species: Rat  
Application Route: Oral

Effects on foetal development : Test Type: reproductive and developmental toxicity study  
Species: Rabbit

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Application Route: Oral

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

### STOT - single exposure

May cause damage to organs.

#### Components:

##### Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:

Target Organs	: Nervous system
Assessment	: The substance or mixture is classified as specific target organ toxicant, single exposure, category 1.

### STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

#### Components:

##### Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:

Target Organs	: Nervous system
Assessment	: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

### Repeated dose toxicity

#### Components:

##### Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:

Species	: Mouse, male
NOAEL	: 2.45 mg/kg
LOAEL	: 8 mg/kg
Application Route	: Oral - feed
Exposure time	: 28 d
Dose	: 0.83, 2.45, 8.0
GLP	: yes
Symptoms	: <** Phrase language not available: [ 6N ] CUST - 10000000009733 **>

Species	: Rat, male
LOAEL	: 4.7 mg/kg
Application Route	: Oral - feed
Exposure time	: 28 d
Dose	: 0, 4.7, 9.3, 19.6, 39.9, 56.2
GLP	: yes
Symptoms	: <** Phrase language not available: [ 6N ] CUST - 10000000009733 **>

##### Naphthenic acids, copper salts:

Species	: Mouse, male and female
NOAEL	: 1,000 mg/l

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LOAEL	:	2,000 mg/l
Application Route	:	Ingestion
Method	:	Regulation (EC) No. 440/2008, Annex, B.26
Remarks	:	Based on data from similar materials

### 2-ethylhexanoic acid, copper salt:

Species	:	Mouse
NOAEL	:	180 - 205 mg/kg
Application Route	:	Oral
Exposure time	:	13 weeks

Species	:	Rat
NOAEL	:	2 mg/l
Application Route	:	Inhalation
Exposure time	:	28 d
Method	:	OECD Test Guideline 412

### Aspiration toxicity

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

### Neurological effects

#### Components:

#### Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:

Remarks	:	Causes neurotoxicity following acute and prolonged exposure
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### Further information

#### Product:

Remarks	:	No data available
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## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

#### Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.13 mg/l Exposure time: 96 h
		LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.14 - 0.21 mg/l Exposure time: 96 h
		LC50 (Salmo gairdneri): 0.11 - 0.15 mg/l Exposure time: 96 h Test Type: flow-through test

Toxicity to daphnia and other	:	EC50 (Daphnia magna (Water flea)): 0.0004 - 0.0013 mg/l
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aquatic invertebrates	Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: EbC50 (Scenedesmus subspicatus): 4.3 mg/l Exposure time: 72 h GLP: yes
M-Factor (Acute aquatic toxicity)	: 1,000
Toxicity to fish (Chronic toxicity)	: NOEC: 0.0052 mg/l Exposure time: 21 d Species: Fish
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 0.00023 mg/l Exposure time: 21 d Species: Crustaceans
M-Factor (Chronic aquatic toxicity)	: 100
Toxicity to soil dwelling organisms	: NOEC: 3.2 mg/kg Exposure time: 28 d Species: Eisenia fetida (earthworms) GLP:yes
Toxicity to terrestrial organisms	: LD50: 1.86 µg/bee Exposure time: 48 h Species: Apis mellifera (bees) Remarks: Contact  LD50: 2.07 µg/bee Exposure time: 48 h Species: Apis mellifera (bees) Remarks: Oral  LD50: 7.1 - 36.1 mg/kg Species: Colinus virginianus (Bobwhite quail) GLP:yes  LD50: 183 - 288 mg/kg Species: Anas platyrhynchos (Mallard duck) GLP:yes

### Tristyrylphenol ethoxylates:

Toxicity to fish	: LC50 (Brachydanio rerio (zebrafish)): 21 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to microorganisms	: Remarks: No data available

### Naphthenic acids, copper salts:



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Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 38.4 µg/l Exposure time: 96 h Test Type: flow-through test Remarks: Based on data from similar materials  LC50 (Pimephales promelas (fathead minnow)): 5.62 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 20 mg/l Exposure time: 48 h Test Type: semi-static test Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 29.6 mg/l Exposure time: 72 h Test Type: Growth inhibition Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to microorganisms	:	EC50 (Vibrio fischerii (Bacteria)): 13 mg/l Exposure time: 48 h Remarks: Based on data from similar materials
Toxicity to fish (Chronic toxicity)	:	NOEC: 18.9 µg/l Exposure time: 7 d Species: Pimephales promelas (fathead minnow)  NOEC: 120 µg/l End point: mortality Exposure time: 64 d Species: Fish Method: OECD Test Guideline 204
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 6.3 µg/l Exposure time: 7 d Species: Ceriodaphnia dubia (water flea) Remarks: Based on data from similar materials  NOEC: 4 µg/l Exposure time: 7 d Species: Ceriodaphnia dubia (water flea) Remarks: Based on data from similar materials
M-Factor (Chronic aquatic toxicity)	:	10

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**2-ethylhexanoic acid, copper salt:**

Toxicity to fish	: LC50 (Oryzias latipes (Orange-red killifish)): 180 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 85.4 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: NOEC (Lemna minor (duckweed)): 0.030 mg/l Exposure time: 7 d Remarks: Based on data from similar materials  NOEC (Desmodesmus subspicatus (green algae)): 49.3 mg/l Exposure time: 96 h
Toxicity to microorganisms	: EC50 (Pseudomonas putida): 112.1 mg/l Exposure time: 17 h Method: DIN 38 412 Part 8
Toxicity to fish (Chronic toxicity)	: NOEC: 0.0022 mg/l Exposure time: 21 d Species: Oncorhynchus mykiss (rainbow trout) Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 25 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211  Chronic Toxicity Value: 75 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211  Chronic Toxicity Value: 63 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211
M-Factor (Chronic aquatic toxicity)	: 1

**12.2 Persistence and degradability****Components:****Tristyrylphenol ethoxylates:**

Biodegradability	: Result: Not readily biodegradable. Biodegradation: 8 % Exposure time: 28 d Method: OECD Test Guideline 301
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**Naphthenic acids, copper salts:**

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Biodegradability : Result: Inherently biodegradable.  
Remarks: Based on data from similar materials

### 2-ethylhexanoic acid, copper salt:

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 99 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301E

## 12.3 Bioaccumulative potential

### Components:

#### Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:

Bioaccumulation : Bioconcentration factor (BCF): 220  
Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3.9

#### Tristyrylphenol ethoxylates:

Partition coefficient: n-octanol/water : Remarks: No data available

#### Naphthenic acids, copper salts:

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)  
Exposure time: 4 d  
Bioconcentration factor (BCF): 2

Partition coefficient: n-octanol/water : log Pow: 7.65

#### 2-ethylhexanoic acid, copper salt:

Partition coefficient: n-octanol/water : log Pow: 2.96

## 12.4 Mobility in soil

### Components:

#### Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:

Distribution among environmental compartments : Remarks: Moderately mobile in soils

## 12.5 Results of PBT and vPvB assessment

### Product:

Assessment : This substance/mixture contains no components considered

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to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### Components:

#### **Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:**

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

### **12.6 Other adverse effects**

#### Product:

Endocrine disrupting potential : 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.

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic life with long lasting effects.

### Components:

#### **Phosphorodithioic acid, O-ethyl S,S-bis(1-methylpropyl) ester:**

Endocrine disrupting potential : 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.

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## **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 contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.  
Do not burn, or use a cutting torch on, the empty drum.

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### SECTION 14: Transport information

#### 14.1 UN number

UNRTDG	:	UN 3018
IMDG	:	UN 3018
IATA	:	UN 3018

#### 14.2 UN proper shipping name

UNRTDG	:	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC (Cadusafos)
IMDG	:	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC (Cadusafos)
IATA	:	Organophosphorus pesticide, liquid, toxic (Cadusafos)

#### 14.3 Transport hazard class(es)

	Class	Subsidiary risks
UNRTDG	: 6.1	
IMDG	: 6.1	
IATA	: 6.1	

#### 14.4 Packing group

UNRTDG	
Packing group	: III
Labels	: 6.1
IMDG	
Packing group	: III
Labels	: 6.1
EmS Code	: F-A, S-A
IATA (Cargo)	
Packing instruction (cargo aircraft)	: 663
Packing instruction (LQ)	: Y642
Packing group	: III
Labels	: Toxic
IATA (Passenger)	
Packing instruction (passenger aircraft)	: 655
Packing instruction (LQ)	: Y642
Packing group	: III
Labels	: Toxic

#### 14.5 Environmental hazards

UNRTDG	
Environmentally hazardous	: no

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### IMDG

Marine pollutant : 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

Not applicable for product as supplied.

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## SECTION 15: Regulatory information

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

#### The components of this product are reported in the following inventories:

TCSI	: On the inventory, or in compliance with the inventory
TSCA	: Product contains substance(s) not listed on TSCA inventory.
AIIC	: Not in compliance with the inventory
DSL	: This product contains chemical substance(s) exempt from CEPA DSL Inventory requirements. It is regulated as a pesticide subject to Pest Control Products Act (PCPA) requirements. Read the PCPA label, authorized under the Pest Control Products Act, prior to using or handling this pest control product.
ENCS	: Not in compliance with the inventory
ISHL	: Not in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: Not in compliance with the inventory
NZIoC	: Not in compliance with the inventory
TECI	: Not in compliance with the inventory

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### 15.2 Chemical safety assessment

A chemical safety assessment is not required for this product (mixture).

## SECTION 16: Other information

### Full text of H-Statements

H300	: Fatal if swallowed.
H301	: Toxic if swallowed.
H310	: Fatal in contact with skin.
H312	: Harmful in contact with skin.
H318	: Causes serious eye damage.
H330	: Fatal if inhaled.
H361	: Suspected of damaging fertility or the unborn child.
H370	: Causes damage to organs.
H372	: Causes damage to organs through prolonged or repeated exposure.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H412	: Harmful to aquatic life with long lasting effects.

### 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
Repr.	: Reproductive toxicity
STOT RE	: Specific target organ toxicity - repeated exposure
STOT SE	: Specific target organ toxicity - single exposure

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

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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

Other information :

#### Classification of the mixture:

Acute Tox. 4	H302
Acute Tox. 4	H332
Acute Tox. 3	H311
Skin Irrit. 2	H315
Eye Irrit. 2	H319
STOT SE 2	H371
STOT RE 2	H373
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

#### Classification procedure:

Based on product data or assessment
Based on product data or assessment
Based on product data or assessment
Based on product data or assessment
Based on product data or assessment
Calculation method
Calculation method
Calculation method
Calculation method

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