

# **Fipronil Formulation**

Version **Revision Date:** SDS Number: Date of last issue: 04.04.2023 30.09.2023 4789414-00010 Date of first issue: 27.08.2019 4.1

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

1.1 Product identifier

Trade name Fipronil Formulation

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

Use of the Sub-: Veterinary product

stance/Mixture

Recommended restrictions

on use

Not applicable

1.3 Details of the supplier of the safety data sheet

Company **MSD** 

20 Spartan Road

1619 Spartan, South Africa

Telephone +27119239300

E-mail address of person

responsible for the SDS

: EHSDATASTEWARD@msd.com

# 1.4 Emergency telephone number

+1-908-423-6000

# **SECTION 2: Hazards identification**

## 2.1 Classification of the substance or mixture

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

Flammable liquids, Category 3 H226: Flammable liquid and vapour. Acute toxicity, Category 4 H302: Harmful if swallowed.

Acute toxicity, Category 3 H331: Toxic if inhaled. Skin irritation, Category 2 H315: Causes skin irritation.

Eye irritation, Category 2 H319: Causes serious eye irritation.

Specific target organ toxicity - repeated H373: May cause damage to organs through pro-

exposure, Category 2 longed or repeated exposure. H400: Very toxic to aquatic life.

Short-term (acute) aquatic hazard, Cate-

Long-term (chronic) aquatic hazard, Cat-H410: Very toxic to aquatic life with long lasting

egory 1

effects.

#### 2.2 Label elements

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





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Hazard pictograms :









Signal word : Danger

Hazard statements : H226 Flammable liquid and vapour.

H302 Harmful if swallowed.H315 Causes skin irritation.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H373 May cause damage to organs through prolonged or

repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P210 Keep away from heat, hot surfaces, sparks, open

flames and other ignition sources. No smoking. P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protec-

tion/ face protection.

Response:

P304 + P340 + P311 IF INHALED: Remove person to fresh

air and keep comfortable for breathing. Call a POISON

CENTER/ doctor.

P314 Get medical advice/ attention if you feel unwell.

P391 Collect spillage.

Hazardous components which must be listed on the label:

2-Butoxyethanol Fipronil (ISO)

#### 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.

Vapours may form explosive mixture with air.

#### **SECTION 3: Composition/information on ingredients**

#### 3.2 Mixtures

#### Components

Chemical name	CAS-No. EC-No.	Classification	Concentration (% w/w)
	Index-No.		,
	Registration number		
2-Butoxyethanol	111-76-2	Acute Tox. 4; H302	>= 70 - < 90
	203-905-0	Acute Tox. 3; H331	
	603-014-00-0	Skin Irrit. 2; H315	
		Eye Irrit. 2; H319	
Ethanol#	64-17-5	Flam. Liq. 2; H225	>= 10 - < 20



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	200-578-6 603-002-00-5	Eye Irrit. 2; H319	
Fipronil (ISO)	120068-37-3 424-610-5 608-055-00-8	Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 3; H311 STOT RE 1; H372 (Central nervous system, Kidney) Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 1.000 M-Factor (Chronic aquatic toxicity): 10.000	>= 1 - < 2,5

For explanation of abbreviations see section 16.

#: Voluntarily-disclosed substance

#### **SECTION 4: First aid measures**

#### 4.1 Description of first aid measures

General advice : In the case of accident or if you feel unwell, seek medical ad-

vice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

Protection of first-aiders : First Aid responders should pay attention to self-protection,

and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

If inhaled : If inhaled, remove to fresh air.

If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with plenty of water

for at least 15 minutes while removing contaminated clothing

and shoes.

Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water

for at least 15 minutes.

If easy to do, remove contact lens, if worn.

Get medical attention.





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If swallowed : If swallowed, DO NOT induce vomiting unless directed to do

so by medical personnel. Get medical attention.

Rinse mouth thoroughly with water.

Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

Toxic if inhaled.

May cause damage to organs through prolonged or repeated

exposure.

There may be delayed neurological effects, including brain

oedema.

Must not be confused with organophosphorous compounds!

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

### **SECTION 5: Firefighting measures**

5.1 Extinguishing media

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

Do not use a solid water stream as it may scatter and spread

fire.

Flash back possible over considerable distance. Vapours may form explosive mixtures with air.

Exposure to combustion products may be a hazard to health.

Hazardous combustion prod: :

ucts

Nitrogen oxides (NOx)

Sulphur oxides Carbon oxides Chlorine compounds Fluorine compounds

5.3 Advice for firefighters

Special protective equipment :

for firefighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

Specific extinguishing meth- : Use extinguishing measures that are appropriate to local cir-





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ods cumstances and the surrounding environment.

Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

#### **SECTION 6: Accidental release measures**

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

Personal precautions : Remove all sources of ignition.

Use personal protective equipment.

Follow safe handling advice (see section 7) and personal pro-

tective equipment recommendations (see section 8).

#### 6.2 Environmental precautions

Environmental precautions : Avoid release to the environment.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages

cannot be contained.

### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Non-sparking tools should be used.

Soak up with inert absorbent material.

Suppress (knock down) gases/vapours/mists with a water

spray jet.

For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absor-

bent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to deter-

mine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

### 6.4 Reference to other sections

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

### **SECTION 7: Handling and storage**

### 7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust

ventilation.

Use explosion-proof electrical, ventilating and lighting equip-





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ment.

Advice on safe handling : Do not get on skin or clothing.

Do not breathe mist or vapours.

Do not swallow. Do not get in eyes.

Wash skin thoroughly after handling.

Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure as-

sessment

Non-sparking tools should be used. Keep container tightly closed.

Keep away from heat, hot surfaces, sparks, open flames and

other ignition sources. No smoking.

Take precautionary measures against static discharges. Do not eat, drink or smoke when using this product.

Take care to prevent spills, waste and minimize release to the

environment.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye

flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contami-

nated clothing before re-use.

The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the

use of administrative controls.

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

Requirements for storage areas and containers

Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep

away from heat and sources of ignition.

Advice on common storage : Do not store with the following product types:

Strong oxidizing agents

Self-reactive substances and mixtures

Organic peroxides Flammable solids Pyrophoric liquids Pyrophoric solids

Self-heating substances and mixtures

Substances and mixtures, which in contact with water, emit

flammable gases Explosives

Gases

Very acutely toxic substances and mixtures

7.3 Specific end use(s)

Specific use(s) : No data available



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# **SECTION 8: Exposure controls/personal protection**

# 8.1 Control parameters

### **Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
2-Butoxyethanol	111-76-2	OEL- ML	40 ppm	ZA OEL
		Further information: Occupational Exposure Limits - Maximum Limits For Hazardous Chemical Agents		
		TWA	20 ppm 98 mg/m3	2000/39/EC
		STEL	50 ppm 246 mg/m3	2000/39/EC
Ethanol	64-17-5	OEL- RL STEL/C	2.000 ppm	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
Fipronil (ISO)	120068-37- 3	TWA	2 μg/m3 (OEB 4)	Internal
	Further information: Skin			
		Wipe limit	20 μg/100 cm2	Internal

# **Biological occupational exposure limits**

Substance name	CAS-No.	Control parameters	Sampling time	Basis
2-Butoxyethanol	111-76-2	Butoxyacetic acid (BAA): 200 mg/g creatinine (Urine)	End of shift	ZA BEI

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

Substance name	End Use	Exposure routes	Potential health effects	Value
2-Butoxyethanol	Workers	Inhalation	Long-term systemic effects	98 mg/m3
	Workers	Inhalation	Acute systemic effects	1091 mg/m3
	Workers	Inhalation	Acute local effects	246 mg/m3
	Workers	Skin contact	Long-term systemic effects	125 mg/kg bw/day
	Workers	Skin contact	Acute systemic effects	89 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	59 mg/m3
	Consumers	Inhalation	Acute systemic effects	426 mg/m3
	Consumers	Inhalation	Acute local effects	147 mg/m3
	Consumers	Skin contact	Long-term systemic effects	75 mg/kg bw/day
	Consumers	Skin contact	Acute systemic effects	89 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	6,3 mg/kg bw/day



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	Consumers	Ingestion	Acute systemic effects	26,7 mg/kg bw/day
Ethanol	Workers	Inhalation	Long-term systemic effects	950 mg/m3
	Workers	Skin contact	Long-term systemic effects	343 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	114 mg/m3
	Consumers	Skin contact	Long-term systemic effects	206 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	87 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
2-Butoxyethanol	Fresh water	8,8 mg/l
	Marine water	0,88 mg/l
	Freshwater - intermittent	26,4 mg/l
	Sewage treatment plant	463 mg/l
	Fresh water sediment	34,6 mg/kg dry
		weight (d.w.)
	Marine sediment	3,46 mg/kg dry
		weight (d.w.)
	Soil	2,33 mg/kg dry
		weight (d.w.)
	Oral (Secondary Poisoning)	20 mg/kg food
Ethanol	Fresh water	0,96 mg/l
	Freshwater - intermittent	2,75 mg/l
	Marine water	0,79 mg/l
	Sewage treatment plant	580 mg/l
	Fresh water sediment	3,6 mg/kg dry
		weight (d.w.)
	Marine sediment	2,9 mg/kg dry
		weight (d.w.)
	Soil	0,63 mg/kg dry
		weight (d.w.)
	Oral (Secondary Poisoning)	380 mg/kg food

#### 8.2 Exposure controls

# **Engineering measures**

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

Essentially no open handling permitted.

Use closed processing systems or containment technologies.

If handled in a laboratory, use a properly designed biosafety cabinet, fume hood, or other containment device if the potential exists for aerosolization. If this potential does not exist, handle over lined trays or benchtops.

Use explosion-proof electrical, ventilating and lighting equipment.

# Personal protective equipment

Eye/face protection : Wear safety glasses with side shields or goggles.

If the work environment or activity involves dusty conditions,

mists or aerosols, wear the appropriate goggles.

Wear a faceshield or other full face protection if there is a





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potential for direct contact to the face with dusts, mists, or

aerosols.

Hand protection

Material : Chemical-resistant gloves

Remarks : Consider double gloving. Take note that the product is flam-

mable, which may impact the selection of hand protection.

Skin and body protection : Work uniform or laboratory coat.

Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable

suits) to avoid exposed skin surfaces.

Use appropriate degowning techniques to remove potentially

contaminated clothing.

Respiratory protection : If adequate local exhaust ventilation is not available or expo-

sure assessment demonstrates exposures outside the rec-

ommended guidelines, use respiratory protection.

Filter type : Combined particulates and organic vapour type (A-P)

## **SECTION 9: Physical and chemical properties**

#### 9.1 Information on basic physical and chemical properties

Appearance : liquid
Colour : yellow
Odour : characteristic
Odour Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling

range

78,5 °C

Flash point : 52 °C

Evaporation rate : No data available

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 : No data available

Relative vapour density : 0,91 - 0,95

Relative density : 0,91 - 0,95

Density : No data available

Solubility(ies)



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Water solubility : slightly soluble Partition coefficient: n- : Not applicable

octanol/water

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

9.2 Other information

Flammability (liquids) : Not applicable

Molecular weight : No data available

Particle size : Not applicable

### **SECTION 10: Stability and reactivity**

#### 10.1 Reactivity

Not classified as a reactivity hazard.

#### 10.2 Chemical stability

Stable under normal conditions.

#### 10.3 Possibility of hazardous reactions

Hazardous reactions : Flammable liquid and vapour.

Vapours may form explosive mixture with air. Can react with strong oxidizing agents.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

# 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

# **SECTION 11: Toxicological information**

### 11.1 Information on toxicological effects

Information on likely routes of : Inhalation

exposure Skin contact

Ingestion
Eye contact

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**Acute toxicity** 

Harmful if swallowed. Toxic if inhaled.

**Product:** 

Acute oral toxicity : Acute toxicity estimate: 1.290 mg/kg

Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 3 mg/l

Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2.000 mg/kg

Method: Calculation method

**Components:** 

2-Butoxyethanol:

Acute oral toxicity : LD50 (Guinea pig): 1.200 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 3 mg/l

Exposure time: 4 h
Test atmosphere: vapour
Method: Expert judgement

Acute dermal toxicity : LD50 (Guinea pig): > 2.000 mg/kg

**Ethanol:** 

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 124,7 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Fipronil (ISO):

Acute oral toxicity : LD50 (Rat): 92 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0,36 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): 354 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Components:

2-Butoxyethanol:

Species : Rabbit

Method : Directive 67/548/EEC, Annex V, B.4.



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Result : Skin irritation

**Ethanol:** 

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

Fipronil (ISO):

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

**Components:** 

2-Butoxyethanol:

Species : Rabbit

Method : OECD Test Guideline 405

Result : Irritation to eyes, reversing within 21 days

Ethanol:

Species : Rabbit

Method : OECD Test Guideline 405

Result : Irritation to eyes, reversing within 21 days

Fipronil (ISO):

Species : Rabbit

Method : OECD Test Guideline 405

Result : No eye irritation

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

**Components:** 

2-Butoxyethanol:

Test Type : Maximisation Test Exposure routes : Skin contact Species : Guinea pig

Method : OECD Test Guideline 406

Result : negative

**Ethanol:** 

Test Type : Local lymph node assay (LLNA)



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Exposure routes : Skin contact
Species : Mouse
Result : negative

Fipronil (ISO):

Test Type : Buehler Test Exposure routes : Skin contact Species : Guinea pig

Method : OECD Test Guideline 406

Result : negative

Germ cell mutagenicity

Not classified based on available information.

**Components:** 

2-Butoxyethanol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Result: negative

Test Type: In vitro sister chromatid exchange assay in mam-

malian cells Result: equivocal

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Rat

Application Route: Intraperitoneal injection

Result: negative

Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Mouse

Application Route: Intraperitoneal injection

Result: negative

**Ethanol:** 

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test

Result: negative

Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)

Species: Mouse

Application Route: Ingestion

Result: equivocal





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Fipronil (ISO):

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Test Type: Chromosome aberration test in vitro

Method: OECD Test Guideline 473

Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Mouse

Application Route: Ingestion Method: OECD Test Guideline 474

Result: negative

Test Type: Unscheduled DNA synthesis (UDS) test with

mammalian liver cells in vivo

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 486

Result: negative

#### Carcinogenicity

Not classified based on available information.

#### **Components:**

### 2-Butoxyethanol:

Species : Rat

Application Route : inhalation (vapour)

Exposure time : 2 Years
Result : negative

Fipronil (ISO):

Species : Mouse
Application Route : Ingestion
Exposure time : 78 weeks

Method : Directive 67/548/EEC, Annex V, B.32.

Result : negative

Species : Rat
Application Route : Ingestion
Exposure time : 104 weeks

Method : Directive 67/548/EEC, Annex, B.33

Result : positive

Remarks : The mechanism or mode of action is not relevant in humans.



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#### Reproductive toxicity

Not classified based on available information.

#### **Components:**

2-Butoxyethanol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Mouse

**Application Route: Ingestion** 

Result: negative

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rat

Application Route: Ingestion

Result: negative

Test Type: Embryo-foetal development

Species: Rat

Application Route: inhalation (vapour)

Result: negative

**Ethanol:** 

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Mouse

Application Route: Ingestion

Result: negative

Fipronil (ISO):

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

**Application Route: Ingestion** 

Result: negative

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rabbit

Application Route: Ingestion Method: OECD Test Guideline 414

Result: negative

#### STOT - single exposure

Not classified based on available information.

#### STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

### **Components:**

Fipronil (ISO):

Exposure routes : Ingestion

Target Organs : Central nervous system, Kidney

Assessment : Shown to produce significant health effects in animals at con-

centrations of 10 mg/kg bw or less.



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#### Repeated dose toxicity

#### **Components:**

**Ethanol:** 

Species : Rat

NOAEL : 1.280 mg/kg LOAEL : 3.156 mg/kg Application Route : Ingestion Exposure time : 90 Days

Fipronil (ISO):

Species : Rabbit
NOAEL : 5 mg/kg
LOAEL : 10 mg/kg
Application Route : Skin contact
Exposure time : 21 Days

Method : OECD Test Guideline 410

Species : Rat, male
NOAEL : 0,059 mg/kg
LOAEL : 0,019 mg/kg
Application Route : Ingestion
Exposure time : 89 Weeks

Method : Directive 67/548/EEC, Annex, B.33

#### **Aspiration toxicity**

Not classified based on available information.

### **SECTION 12: Ecological information**

#### 12.1 Toxicity

#### **Components:**

2-Butoxyethanol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.464 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 1.800 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 1.840

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

EC10 (Pseudokirchneriella subcapitata (green algae)): 679

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201



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Toxicity to fish (Chronic tox-

icity)

NOEC: > 100 mg/l Exposure time: 21 d

Species: Danio rerio (zebra fish)

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

EC10: 134 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

**Ethanol:** 

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 1.000 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Ceriodaphnia (water flea)): > 1.000 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

ErC50 (Chlorella vulgaris (Fresh water algae)): 275 mg/l

Exposure time: 72 h

EC10 (Chlorella vulgaris (Fresh water algae)): 11,5 mg/l

Exposure time: 72 h

Toxicity to microorganisms : EC50 (Pseudomonas putida): 6.500 mg/l

Exposure time: 16 h

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

NOEC: 9,6 mg/l Exposure time: 9 d

Species: Daphnia magna (Water flea)

Fipronil (ISO):

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 85,2 μg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

LC50 (Mysidopsis bahia (opossum shrimp)): 0,14 µg/l

Exposure time: 96 h

Toxicity to algae/aquatic

plants

EC50 (Desmodesmus subspicatus (green algae)): 68 μg/l

Exposure time: 96 h

Method: OECD Test Guideline 201

NOEC (Desmodesmus subspicatus (green algae)): 40 µg/l

Exposure time: 96 h

Method: OECD Test Guideline 201

M-Factor (Acute aquatic tox-

icity)

1.000

Toxicity to microorganisms : EC50 : > 1.000 mg/l

Exposure time: 3 h

Toxicity to fish (Chronic tox-

icity)

NOEC: 2,9 μg/l

Exposure time: 35 d

Species: Cyprinodon variegatus (sheepshead minnow)





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Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

NOEC: 0,0077 µg/l Exposure time: 28 d

Species: Mysidopsis bahia (opossum shrimp)

M-Factor (Chronic aquatic

toxicity)

10.000

#### 12.2 Persistence and degradability

#### **Components:**

2-Butoxyethanol:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 90,4 % Exposure time: 28 d

Method: OECD Test Guideline 301B

**Ethanol:** 

Biodegradability : Result: Readily biodegradable.

Biodegradation: 84 % Exposure time: 20 d

Fipronil (ISO):

Biodegradability : Result: Not readily biodegradable.

Biodegradation: 47 % Exposure time: 28 d

Method: OECD Test Guideline 301B

#### 12.3 Bioaccumulative potential

#### Components:

2-Butoxyethanol:

Partition coefficient: n-

octanol/water

log Pow: 0,81

**Ethanol:** 

Partition coefficient: n-

octanol/water

log Pow: -0,35

Fipronil (ISO):

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)

Bioconcentration factor (BCF): 321

Partition coefficient: n-

octanol/water

log Pow: 4

### 12.4 Mobility in soil

No data available

#### 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.

#### 12.6 Other adverse effects

#### **Product:**

Endocrine disrupting poten-

tial

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

levels of 0.1% or higher.

# **SECTION 13: Disposal considerations**

#### 13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

According to the European Waste Catalogue, Waste Codes

are not product specific, but application specific.

Waste codes should be assigned by the user, preferably in

discussion with the waste disposal authorities.

Do not dispose of waste into sewer.

Contaminated packaging : Empty containers should be taken to an approved waste han-

dling site for recycling or disposal.

Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death. If not otherwise specified: Dispose of as unused product.

# **SECTION 14: Transport information**

### 14.1 UN number

ADN : UN 1992
ADR : UN 1992
RID : UN 1992
IMDG : UN 1992
IATA : UN 1992

# 14.2 UN proper shipping name

**ADN** : FLAMMABLE LIQUID, TOXIC, N.O.S.

(Ethanol, Fipronil (ISO))

**ADR** : FLAMMABLE LIQUID, TOXIC, N.O.S.

(Ethanol, Fipronil (ISO))

RID : FLAMMABLE LIQUID, TOXIC, N.O.S.

(Ethanol, Fipronil (ISO))

**IMDG** : FLAMMABLE LIQUID, TOXIC, N.O.S.

(Ethanol, Fipronil (ISO))



# **Fipronil Formulation**

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IATA : Flammable liquid, toxic, n.o.s.

(Ethanol, Fipronil (ISO))

14.3 Transport hazard class(es)

Class Subsidiary risks **ADN** 3 6.1 3 **ADR** 6.1 RID 3 6.1 **IMDG** 3 6.1 **IATA** 3 6.1

14.4 Packing group

**ADN** 

Packing group : III
Classification Code : FT1
Hazard Identification Number : 36
Labels : 3 (6.1)

**ADR** 

Packing group : III
Classification Code : FT1
Hazard Identification Number : 36
Labels : 3 (6.1)
Tunnel restriction code : (D/E)

**RID** 

Packing group : III
Classification Code : FT1
Hazard Identification Number : 36
Labels : 3 (6.1)

**IMDG** 

Packing group : III
Labels : 3 (6.1)
EmS Code : F-E, S-D

IATA (Cargo)

Packing instruction (cargo : 366

aircraft)

Packing instruction (LQ) : Y343
Packing group : III

Labels : Flammable Liquids, Toxic

IATA (Passenger)

Packing instruction (passen: 355

ger aircraft)

Packing instruction (LQ) : Y343
Packing group : III

Labels : Flammable Liquids, Toxic

14.5 Environmental hazards

ADN

Environmentally hazardous : yes



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**ADR** 

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

**IMDG** 

Marine pollutant : 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

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

AICS : not determined

DSL : not determined

IECSC : not determined

#### 15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

#### **SECTION 16: Other information**

Other information : Items where changes have been made to the previous version

are highlighted in the body of this document by two vertical

lines.

#### **Full text of H-Statements**

H225 : Highly flammable liquid and vapour.

H301
H302
H311
Toxic if swallowed.
H311
Toxic in contact with skin.
H315
Causes skin irritation.
H319
Causes serious eye irritation.

H330 : Fatal if inhaled. H331 : Toxic if inhaled.

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.



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#### Full text of other abbreviations

Acute Tox. : Acute toxicity

Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard

Eye Irrit. : Eye irritation
Flam. Liq. : Flammable liquids
Skin Irrit. : Skin irritation

STOT RE : Specific target organ toxicity - repeated exposure

2000/39/EC : Europe. Commission Directive 2000/39/EC establishing a first

list of indicative occupational exposure limit values

ZA BEI : South Africa. The Regulations for Hazardous Chemical

Agents, Biological Exposure Indices

ZA OEL : South Africa. The Regulations for Hazardous Chemical

Agents, Occupational Exposure Limits

2000/39/EC / TWA : Limit Value - eight hours 2000/39/EC / STEL : Short term exposure limit

ZA OEL / OEL- ML : Occupational Exposure Limit Maximum limit - 8- hour expo-

sure or equivalent (12 hour shifts).

ZA OEL / OEL- RL STEL/C : Occupational Exposure Limit Restricted limit - Short term oc-

cupational exposure limits / ceiling limits

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



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Sources of key data used to compile the Safety Data Sheet

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-

cy, http://echa.europa.eu/

Classification of the mi	xture:	Classification procedure:
Flam. Liq. 3	H226	Based on product data or assessment
Acute Tox. 4	H302	Calculation method
Acute Tox. 3	H331	Calculation method
Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method
STOT RE 2	H373	Calculation method
Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 1	H410	Calculation method

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