

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



Boehringer
Ingelheim

Frontline Combo®, liquid (finished product)

Version	Revision Date:	SDS Number:	Date of last issue: 15.02.2018
4.0	23.04.2018	000000049050	Date of first issue: 11.04.2017

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

1.1 Product identifier

Trade name : Frontline Combo®, liquid (finished product)

Synonyms : Frontline Combo Spot-On Solution for Dogs and Cats: Frontline Combo® Spot-On Solution for Dogs and Puppies: FRONTLINE COMBO, FRONTLINE COMBO DOGS, FRONTLINE COMBO PARA PERROS, FRONTLINE COMBO SPOT ON CHIEN, FRONTLINE COMBO SPOT ON CHIEN S - M - L - XL, FRONTLINE COMBO SPOT ON DOGS, FRONTLINE COMBO SPOT ON DOGS S - M - L - XL, FRONTLINE COMBO SPOT ON DOGS SOL. AD US. VET., FRONTLINE COMBO SPOT ON KUTYA A.U.V., FRONTLINE COMP, FRONTLINE PLUS, FRONTLINE PLUS DOG, FRONTLINE PLUS KOPEK, FRONTLINE PLUS PARA PERROS
with API: Fipronil, S-Methoprene

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

Use of the Substance/Mixture : Pharmaceutical

Recommended restrictions on use : Safety Data Sheet only for the professional user.

1.3 Details of the supplier of the safety data sheet

Company : Boehringer Ing. Pharma GmbH & Co.KG
Binger Str. 173
55216 Ingelheim am Rhein

Telephone : +498007790900

E-mail address of person responsible for the SDS : EHS-Services@Boehringer-Ingelheim.com

1.4 Emergency telephone number

Int. Emergency Telephone number: +1 703-527-3887 Chemtrec 24-hours

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.
Specific target organ toxicity - repeated	H372: Causes damage to organs through pro-

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exposure , Category 1	longed or repeated exposure.
Acute aquatic toxicity , Category 1	H400: Very toxic to aquatic life.
Chronic aquatic toxicity , 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 :

- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H372 Causes 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.
- P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
- P264 Wash skin thoroughly after handling.
- P273 Avoid release to the environment.

Response:

- P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
- P391 Collect spillage.

Hazardous components which must be listed on the label:

Fipronil

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.

The pharmacological effect of the medicament has to be considered (see package leaflet).

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : organic

Hazardous components

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Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Fipronil	120068-37-3 424-610-5 608-055-00-8	Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 STOT RE 1; H372 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	10
(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester	65733-16-6 613-834-0	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 9 - <= 12
ethanol	64-17-5 200-578-6 603-002-00-5 01-2119457610-43-XXXX	Flam. Liq. 2; H225 Eye Irrit. 2; H319	8

For explanation of abbreviations see section 16.

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 advice immediately (show the label where possible).
First Aid responders should pay attention to self-protection and use the recommended protective clothing
Remove from exposure, lie down.
Take off immediately all contaminated clothing.
Victim to lie down in the recovery position, cover and keep him warm.
- If inhaled : Move to fresh air.
- In case of skin contact : Wash off immediately with plenty of water.
- In case of eye contact : Rinse immediately with plenty of water for at least 15 minutes.
Keep eye wide open while rinsing.
- If swallowed : Rinse mouth.
Drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

- Risks : No information available.
- Harmful if swallowed.
Causes damage to organs through prolonged or repeated exposure.

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4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Observe the summary of product characteristics of proprietary medicinal products
Symptomatic treatment (decontamination, vital functions).

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water
Dry chemical
Foam
Carbon dioxide (CO₂)

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : In case of fire and/or explosion do not breathe fumes.
Can be released in case of fire:
Carbon oxides
Nitrogen oxides (NO_x)
Sulphur oxides
Hydrogen chloride gas

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
complete suit protecting against chemicals

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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear personal protective equipment.
Ensure adequate ventilation.
High risk of slipping due to leakage/spillage of product.
Suppress vapours with waterspray.

6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Pick up and transfer to properly labelled containers.

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6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Breathing must be protected when large quantities are de-canted without local exhaust ventilation. Keep container closed when not in use.
- Advice on protection against fire and explosion : No special protective measures against fire required. The product is not flammable.
- Hygiene measures : General industrial hygiene practice. Wash hands and face before breaks and immediately after handling the product. Keep working clothes separately.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Keep tightly closed in a dry and cool place. Keep in a well-ventilated place. Protect from heat and direct sunlight. Joint-less smooth floor
- Advice on common storage : Keep away from food, drink and animal feedingstuffs. Advice on Segregation
- Storage class (TRGS 510) : 3, Flammable Liquids

7.3 Specific end use(s)

- Specific use(s) : Consult the technical guidelines for the use of this substance/mixture.

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-(2-ethoxyethoxy)ethanol	111-90-0	AGW (Vapour and aerosols)	6 ppm 35 mg/m ³	DE TRGS 900
Peak-limit: excursion factor (category)	2;(I)			
Further information	Commission for dangerous substances, Sum of vapor and aerosols., When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			

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ethanol	64-17-5	AGW	500 ppm 960 mg/m3	DE TRGS 900
Peak-limit: excursion factor (category)	2;(II)			
Further information	Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission)., When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Ethanol	Workers	Inhalation	Acute local effects	= 1900 mg/m3
	Workers	Skin contact	Long-term systemic effects	= 343 mg/kg
	Workers	Inhalation	Long-term systemic effects	= 950 mg/m3
	Consumers	Inhalation	Acute local effects	= 950 mg/m3
	Consumers	Skin contact	Long-term systemic effects	= 206 mg/kg
	Consumers	Inhalation	Long-term systemic effects	= 114 mg/m3
	Consumers	Ingestion	Long-term systemic effects	= 87 mg/kg

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

Substance name	Environmental Compartment	Value
Ethanol	Fresh water	= 0,96 mg/l
	Fresh water sediment	= 3,6 mg/kg
	Marine water	= 0,79 mg/l
	Soil	= 0,36 mg/kg
	Intermittent use/release	= 2,75 mg/l
	Sewage Treatment Systems	= 580 mg/l
	Oral	= 720 mg/kg

8.2 Exposure controls

Engineering measures

Local exhaust

Emergency sprinkling nozzle

Use only appropriately classified electrical equipment and powered industrial trucks.

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Personal protective equipment

Eye protection	: Safety glasses with side-shields
Hand protection	
Material	: Nitrile rubber
Break through time	: 480 min
Glove thickness	: 0,43 mm
Directive	: Protective gloves against chemicals and micro-organisms
Protective index	: Class 6
Skin and body protection	: Laboratory: laboratory coat; factory: disposable Overall.
Respiratory protection	: No personal respiratory protective equipment normally required. Breathing apparatus needed only when aerosol or mist is formed. Respiratory protection ABEK2
Protective measures	: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Only use protective equipment in accordance with national/international regulations. Follow the national regulations about wearing personal protective equipment and the warranty given by the manufacturer for the safe function.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	: liquid, viscous
Colour	: amber
Odour	: odourless
Odour Threshold	: No data available
pH	: 5,2
Melting point/range	: Not applicable
Boiling point/boiling range	: 78 °C
Flash point	: 40 °C(1.013 hPa) Method: ISO 3679
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable
Upper explosion limit / Upper	: No data available

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flammability limit

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : 1,02

Bulk density : Not applicable

Solubility(ies)
Water solubility : 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 : No data available

Explosive properties : Not tested

Oxidizing properties : No data available

9.2 Other information

Self-ignition : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : Extremes of temperature and direct sunlight.

10.5 Incompatible materials

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Materials to avoid : No data available

10.6 Hazardous decomposition products

No data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity : LD50 (Rat): 750 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : Acute toxicity estimate: > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2.000 mg/kg
Method: Calculation method

Components:

Fipronil:

Acute oral toxicity : LD50 (Rat): 97 mg/kg
Assessment: The component/mixture is toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rabbit): 0,68 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The component/mixture is toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rat): 354 mg/kg
Assessment: The component/mixture is toxic after single contact with skin.

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Acute oral toxicity : LD50 (Rat, male and female): > 5.050 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC0 (Rat): > 2,38 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 5.050 mg/kg
Method: OECD Test Guideline 402

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ethanol:

Acute oral toxicity : LD50 (Rat): = 10.470 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): = 124,7 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : Remarks: No data available

Skin corrosion/irritation

Not classified based on available information.

Product:

Species: Rabbit
Method: OECD Test Guideline 404

Components:

Fipronil:

Species: Rabbit
Exposure time: 4 h
Method: OECD Test Guideline 404
Result: No skin irritation

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Species: Rabbit
Exposure time: 4 h
Method: OECD Test Guideline 404
Result: No skin irritation

ethanol:

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

Serious eye damage/eye irritation

Not classified based on available information.

Product:

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

Components:

Fipronil:

Species: Rabbit

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Method: OECD Test Guideline 405
Result: No eye irritation
Remarks: No data available

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Species: Rabbit
Exposure time: 72 h
Method: OECD Test Guideline 405
Result: No eye irritation

ethanol:

Species: Rabbit
Method: OECD Test Guideline 405
Result: Irritating to eyes.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Product:

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

Components:

Fipronil:

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

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

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

ethanol:

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

Germ cell mutagenicity

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Components:

Fipronil:

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

Test system: Escherichia coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Cytogenetic assay
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: Chromosomal aberration test
Test system: V79 cells (Chinese hamster)
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: Mammalian cell gene mutation assay
Test system: V79 cells (Chinese hamster)
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Application Route: Oral
Result: negative

Test Type: Unscheduled DNA synthesis
Species: Rat (male)
Application Route: Oral
Result: negative

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Genotoxicity in vitro : Test Type: Ames test
Test system: S. typhimurium and E. coli
Method: OECD Test Guideline 471
Result: negative

Test Type: Chromosomal aberration test
Test system: Chinese hamster ovary cells
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo : Remarks: No data available

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ethanol:

Genotoxicity in vitro : Test Type: Ames-test
Test system: Salmonella typhimurium
Method: OECD Test Guideline 471
Result: negative

Test Type: Mouse lymphoma assay
Test system: mouse lymphoma cells
Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Remarks: No data available

Carcinogenicity

Not classified based on available information.

Components:

Fipronil:

Application Route: Oral
0,06 mg/kg bw/day

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Species: Rat
Application Route: Oral
Exposure time: 104 weeks
Result: negative
Remarks: Did not show carcinogenic effects in animal experiments.

Species: Mouse
Application Route: Oral
Exposure time: 72-78 weeks
Result: negative
Remarks: Did not show carcinogenic effects in animal experiments.

ethanol:

Remarks: No data available

Reproductive toxicity

Not classified based on available information.

Components:

Fipronil:

Effects on fertility : Remarks: No data available

Effects on foetal development : Species: Rat
General Toxicity Maternal: NOAEL: 4 mg/kg body weight
Developmental Toxicity: NOAEL: 20 mg/kg body weight

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(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Effects on fertility : Remarks: The results of animal studies gave no indication of a fertility impairing effect.

Effects on foetal development : Species: Rabbit
Application Route: Oral
General Toxicity Maternal: NOAEL: 100 mg/kg body weight
Teratogenicity: NOAEL: 100 mg/kg body weight
Developmental Toxicity: NOAEL: 100 mg/kg body weight
Method: OECD Test Guideline 414

Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 250 mg/kg body weight
Teratogenicity: NOAEL: 250 mg/kg body weight
Developmental Toxicity: NOAEL: 250 mg/kg body weight
Method: OECD Test Guideline 414

ethanol:

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

STOT - single exposure

Not classified based on available information.

Components:

Fipronil:

Remarks: No data available

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Remarks: No data available

ethanol:

Remarks: No data available

STOT - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Components:

Fipronil:

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

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Remarks: No data available

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ethanol:

Remarks: No data available

Repeated dose toxicity

Components:

Fipronil:

Species: Rat
Application Route: Oral
Exposure time: 13 weeks
Dose: 1,5,30,300 ppm

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Species: Rat
NOAEL: < 200 mg/kg
LOAEL: 200 mg/kg
Application Route: Oral
Exposure time: 90-day

Species: dog
NOAEL: 100 mg/kg
LOAEL: 300 mg/kg
Application Route: Oral
Exposure time: 90-day

Aspiration toxicity

Not classified based on available information.

Components:

Fipronil:

No data available

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

No data available

ethanol:

No data available

Further information

Components:

Fipronil:

Remarks: No data available

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Remarks: No data available

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ethanol:

Remarks: Evaporation of solvents may cause irritation to eyes and mucous membranes.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Fipronil:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0,248 mg/l Exposure time: 96 h LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,0852 mg/l Exposure time: 96 h NOEC (Lepomis macrochirus (Bluegill sunfish)): 0,0432 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,190 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Desmodesmus subspicatus (green algae)): 0,068 mg/l End point: Growth rate Exposure time: 96 h Method: OECD Test Guideline 201 NOEC (Desmodesmus subspicatus (green algae)): 0,04 mg/l End point: Growth rate Exposure time: 96 h Method: OECD Test Guideline 201 EC50 (Anabaena flos-aquae (cyanobacterium)): > 0,17 mg/l End point: Growth rate Exposure time: 120 h NOEC (Anabaena flos-aquae (cyanobacterium)): 0,17 mg/l End point: Growth rate Exposure time: 120 h EC50 (Selenastrum capricornutum (green algae)): > 0,14 mg/l End point: Growth rate Exposure time: 120 h NOEC (Selenastrum capricornutum (green algae)): 0,14 mg/l End point: Growth rate Exposure time: 120 h
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to microorganisms	:	EC50 (activated sludge): > 1.000 mg/l Exposure time: 3 h

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Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity) : NOEC: 0,015 mg/l
Exposure time: 90 d
Species: Oncorhynchus mykiss (rainbow trout)
Method: OECD Test Guideline 210

Lowest observed effect concentration: 0,026 mg/l
Exposure time: 90 d
Species: Oncorhynchus mykiss (rainbow trout)
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 5 - 20 µg/l
End point: Immobilization
Exposure time: 21 d
Species: Daphnia (water flea)
Test Type: flow-through test
Method: Daphnia sp., Reproduction Test.

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to soil dwelling organisms : Test Type: artificial soil
LC50: > 1.000 mg/kg
Exposure time: 14 d
Species: 'Eisenia foetida'
Method: Earthworm, Acute Toxicity Test.

Toxicity to terrestrial organisms : LD50: 0,00000417
Exposure time: 48 d
End point: Acute oral toxicity
Species: Apis mellifera (bees)

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 4,26 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,22 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Algae): 2,264 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) : Remarks: No data available

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,019 mg/l
Exposure time: 21 d
Species: Daphnia (water flea)
Method: OECD Test Guideline 211

ethanol:

Toxicity to fish : LC50 (golden orfe): = 8.140 mg/l
Exposure time: 48 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): = 9.268 - 14.221 mg/l
Exposure time: 48 h

Toxicity to algae : EC5 (Scenedesmus quadricauda (Green algae)): = 5.000 mg/l
Exposure time: 7 d

Toxicity to microorganisms : EC5 (Pseudomonas putida): = 6.500 mg/l
Exposure time: 16 h

Toxicity to fish (Chronic toxicity) : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: No data available

12.2 Persistence and degradability

Components:

Fipronil:

Biodegradability : Result: not rapidly degradable
Biodegradation: 47 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301D

Biodegradation: 85,8 %
Exposure time: 28 d
Method: MITI Test (II), inherent.

ethanol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 94 %
Method: OECD Test Guideline 301E

Biochemical Oxygen Demand (BOD) : 930 - 1.670 mg/g
Incubation time: 5 d

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Chemical Oxygen Demand (COD) : 1,99 mg/g

ThOD : 2.100 mg/g

12.3 Bioaccumulative potential

Components:

Fipronil:

Bioaccumulation : Exposure time: 14 d
Bioconcentration factor (BCF): 321
Remarks: No bioaccumulation is to be expected (log Pow <= 4).

Partition coefficient: n-octanol/water : log Pow: 3,5 - 4,0 (20 °C)

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Bioaccumulation : Bioconcentration factor (BCF): 516
Method: calculated

Partition coefficient: n-octanol/water : log Pow: 6,34
Method: calculated

ethanol:

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log P(o/w)<1).

Partition coefficient: n-octanol/water : log Pow: -0,32

12.4 Mobility in soil

Components:

Fipronil:

Distribution among environmental compartments : Remarks: No data available

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Distribution among environmental compartments : Remarks: No data available

ethanol:

Distribution among environmental compartments : Remarks: No data available

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12.5 Results of PBT and vPvB assessment

Product:

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

12.6 Other adverse effects

Components:

Fipronil:

Additional ecological information : No data available

(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester:

Additional ecological information : No data available

ethanol:

Adsorbed organic bound halogens (AOX) : Remarks: No data available

Additional ecological information : No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

Contaminated packaging : Packs that cannot be cleaned should be disposed of in the same manner as the contents.
Uncontaminated packaging can be recycled.

SECTION 14: Transport information

14.1 UN number

ADR : UN 1170

RID : UN 1170

IMDG : UN 1170

IATA : UN 1170

14.2 UN proper shipping name

ADR : ETHYL ALCOHOL SOLUTION

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RID : ETHYL ALCOHOL SOLUTION

IMDG : ETHYL ALCOHOL SOLUTION

IATA : Ethyl alcohol solution

14.3 Transport hazard class(es)

ADR : 3

RID : 3

IMDG : 3

IATA : 3

14.4 Packing group

ADR

Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3
Tunnel restriction code : (D/E)

RID

Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

IMDG

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

IATA (Cargo)

Packing instruction (cargo aircraft) : 366
Packing instruction (LQ) : Y344
Packing group : III
Labels : Flammable Liquids

IATA (Passenger)

Packing instruction (passenger aircraft) : 355
Packing instruction (LQ) : Y344
Packing group : III
Labels : Flammable Liquids

14.5 Environmental hazards

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

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14.6 Special precautions for user

Not applicable

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

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Fipronil (2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : See Annex XVII to Regulation (EC) no 1907/2006 for Conditions of restriction

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

E1

P5c

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

		Quantity 1	Quantity 2
E1	ENVIRONMENTAL HAZARDS	100 t	200 t
P5c	FLAMMABLE LIQUIDS	5.000 t	50.000 t

Water contaminating class (Germany) : WGK 3 highly water endangering

TA Luft List (Germany) : Total dust:
Not applicable
Inorganic substances in powdered form:

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Not applicable
Inorganic substances in vapour or gaseous form:
Not applicable
Organic Substances:
portion Class 1: 10 %

Carcinogenic substances:
Not applicable
Mutagenic:
Not applicable
Toxic to reproduction:
Not applicable

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Volatile organic compounds (VOC) content: 73 %, 744,6 g/l
VOC content excluding water

Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Volatile organic compounds (VOC) content: 73 %, 744,6 g/l
VOC content valid only for coating materials used on wood surfaces

Other regulations:

The product is subject to the supply restrictions of the Ordinance on the Prohibition of Chemicals.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

REACH : Not in compliance with the inventory

DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.

Fipronil
(2E,4E,7S)-11-methoxy-3,7,11-trimethyl-2,4-dodecadienoic acid 1-methylethyl ester

AICS : Not in compliance with the inventory

NZIoC : Not in compliance with the inventory

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

KECI : Not in compliance with the inventory

PICCS : Not in compliance with the inventory

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IECSC	:	Not in compliance with the inventory
TCSI	:	Not in compliance with the inventory
TSCA	:	Not On TSCA Inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

SECTION 16: Other information

Full text of H-Statements

H225	:	Highly flammable liquid and vapour.
H301	:	Toxic if swallowed.
H311	:	Toxic in contact with skin.
H319	:	Causes serious eye irritation.
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.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Acute aquatic toxicity
Aquatic Chronic	:	Chronic aquatic toxicity
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
STOT RE	:	Specific target organ toxicity - repeated exposure
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
DE TRGS 900 / AGW	:	Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; 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

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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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Training advice : Provide adequate information, instruction and training for operators.

Other information : Vertical lines in the left hand margin indicate an amendment from the previous version.

Sources of key data used to compile the Safety Data Sheet : The specifications are based on own tests and/or literature data.

Classification of the mixture:

Flam. Liq. 3	H226
Acute Tox. 4	H302
STOT RE 1	H372
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Classification procedure:

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

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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