SAFETY DATA SHEET
according to GB/T 16483 and GB/T 17519

Fipronil Formulation

Version: 1.3  Revision Date: 2021/04/09  SDS Number: 4789370-00004  Date of last issue: 2020/10/10
Date of first issue: 2019/08/27

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Fipronil Formulation

Manufacturer or supplier’s details
Company: MSD
Address: No. 485 Jing Tai Road
Pu Tuo District - Shanghai - China 200331
Telephone: +1-908-740-4000
Emergency telephone number: 86-571-87268110
E-mail address: EHSDATASTEWARD@msd.com

Recommended use of the chemical and restrictions on use
Recommended use: Veterinary product

2. HAZARDS IDENTIFICATION

Emergency Overview

<table>
<thead>
<tr>
<th>Appearance</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
</tr>
</tbody>
</table>

Flammable liquid and vapour. Harmful if swallowed. Toxic in contact with skin. Causes skin irritation. Causes serious eye irritation. Fatal if inhaled. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

GHS Classification

- Flammable liquids: Category 3
- Acute toxicity (Oral): Category 4
- Acute toxicity (Inhalation): Category 2
- Acute toxicity (Dermal): Category 3
- Skin corrosion/irritation: Category 2
- Serious eye damage/eye irritation: Category 2A
- Specific target organ toxicity - repeated exposure: Category 2
- Short-term (acute) aquatic hazard: Category 1
- Long-term (chronic) aquatic: Category 1
Fipronil Formulation

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hazard

GHS label elements
Hazard pictograms:

Signal word: Danger

Hazard statements:
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H330 Fatal 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/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.

Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314 Get medical advice/ attention if you feel unwell.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ at-
Fipronil Formulation

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical name</td>
<td>CAS-No.</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>111-76-2</td>
</tr>
<tr>
<td>Ethanol#</td>
<td>64-17-5</td>
</tr>
<tr>
<td>Fipronil (ISO)</td>
<td>120068-37-3</td>
</tr>
</tbody>
</table>

# Voluntarily-disclosed non-hazardous substance

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.

If inhaled: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms occur.

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.
SAFETY DATA SHEET according to GB/T 16483 and GB/T 17519

Fipronil Formulation

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date:</th>
<th>SDS Number:</th>
<th>Date of last issue:</th>
<th>Date of first issue:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3</td>
<td>2021/04/09</td>
<td>4789370-00004</td>
<td>2020/10/10</td>
<td>2019/08/27</td>
</tr>
</tbody>
</table>

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.

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.

Most important symptoms and effects, both acute and delayed: Harmful if swallowed. Toxic in contact with skin. Causes skin irritation. Causes serious eye irritation. Fatal if inhaled. May cause damage to organs through prolonged or repeated exposure.

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).

Notes to physician: Treat symptomatically and supportively.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media: High volume water jet

Specific hazards during firefighting: 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 products: Nitrogen oxides (NOx)
Sulphur oxides
Carbon oxides
Chlorine compounds
Fluorine compounds

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances 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.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Remove all sources of ignition.
Use personal protective equipment.
Fipronil Formulation

7. HANDLING AND STORAGE

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-
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-
essment
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.

Avoidance of contact : Oxidizing agents
SAFETY DATA SHEET
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Fipronil Formulation

Version 1.3
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Storage


Materials to avoid: Do not store with the following product types:
- Self-reactive substances and mixtures
- Organic peroxides
- Oxidizing agents
- Flammable gases
- Pyrophoric liquids
- Pyrophoric solids
- Self-heating substances and mixtures
- Poisonous gases
- Explosives

Packaging material: Unsuitable material: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Butoxyethanol</td>
<td>111-76-2</td>
<td>PC-TWA</td>
<td>97 mg/m3</td>
<td>CN OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>20 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>STEL</td>
<td>1,000 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Fipronil (ISO)</td>
<td>120068-37-3</td>
<td>TWA</td>
<td>2 µg/m3 (OEB 4)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Further information: Skin</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wipe limit 20 µg/100 cm²</td>
<td>Internal</td>
</tr>
</tbody>
</table>

Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Biological specimen</th>
<th>Sampling time</th>
<th>Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Butoxyethanol</td>
<td>111-76-2</td>
<td>Butoxyacetic acid (BAA)</td>
<td>Urine</td>
<td>End of shift</td>
<td>200 mg/g Creatinine</td>
<td>ACGIH BEI</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(As soon as possible after exposure ceases)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**

**Respiratory protection**: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

**Filter type**: Combined particulates and organic vapour type

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

**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.

**Hand protection**

**Material**: Chemical-resistant gloves

**Remarks**: Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection.

**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 contaminated 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.

### 9. 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**: 78.5 °C
10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions:
- Flammable liquid and vapour.
- Vapours may form explosive mixture with air.
- Can react with strong oxidizing agents.

Oxidizing properties: The substance or mixture is not classified as oxidizing.
Molecular weight: No data available
Particle size: Not applicable
Conditions to avoid: Heat, flames and sparks.
Incompatible materials: Oxidizing agents
Hazardous decomposition products: No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Exposure routes:
- Inhalation
- Skin contact
- Ingestion
- Eye contact

Acute toxicity:
Harmful if swallowed.
Toxic in contact with skin.
Fatal if inhaled.

Product:
- Acute oral toxicity: Acute toxicity estimate: 1,483 mg/kg
  Method: Calculation method
- Acute inhalation toxicity: Acute toxicity estimate: 0.6174 mg/l
  Exposure time: 4 h
  Test atmosphere: vapour
  Method: Calculation method
- Acute dermal toxicity: Acute toxicity estimate: 371.07 mg/kg
  Method: Calculation method

Components:

2-Butoxyethanol:
- Acute oral toxicity: LD50 (Guinea pig): 1,414 mg/kg
  Method: OECD Test Guideline 401
- Acute inhalation toxicity: Acute toxicity estimate: 0.5001 mg/l
  Exposure time: 4 h
  Test atmosphere: vapour
  Method: Expert judgement
  Remarks: Based on the Catalogue of Hazardous Chemicals of China
- Acute dermal toxicity: Acute toxicity estimate: 300 mg/kg
  Method: Expert judgement
  Remarks: Based on the Catalogue of Hazardous Chemicals of China

Ethanol:
- Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
  Method: OECD Test Guideline 401
- Acute inhalation toxicity: LC50 (Rat): 124.7 mg/l
Fipronil Formulation

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
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
Result : Irritation to eyes, reversing within 21 days
Method : OECD Test Guideline 405

Ethanol:
Species : Rabbit
Result : Irritation to eyes, reversing within 21 days
Method : OECD Test Guideline 405

Fipronil (ISO):
Species : Rabbit
Result : No eye irritation
**Fipronil Formulation**

Method: OECD Test Guideline 405

Respiratory or skin sensitisation

Skin sensitisation
Not classified based on available information.

Respiratory sensitisation
Not classified based on available information.

Components:

2-Butoxyethanol:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Maximisation Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 406</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

Ethanol:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Local lymph node assay (LLNA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Mouse</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

Fipronil (ISO):

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Buehler Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 406</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

Germ cell mutagenicity
Not classified based on available information.

Components:

2-Butoxyethanol:

Genotoxicity in vitro

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Bacterial reverse mutation assay (AMES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

Genotoxicity in vitro

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Chromosome aberration test in vitro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

Genotoxicity in vitro

<table>
<thead>
<tr>
<th>Test Type</th>
<th>In vitro mammalian cell gene mutation test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

Genotoxicity in vitro

<table>
<thead>
<tr>
<th>Test Type</th>
<th>In vitro sister chromatid exchange assay in mammalian cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>equivocal</td>
</tr>
</tbody>
</table>

Genotoxicity in vivo

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Mammalian erythrocyte micronucleus test (in vivo</th>
</tr>
</thead>
</table>
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

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.
Fipronil Formulation

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
- Result: negative

Species: Rat
- Application Route: Ingestion
- Exposure time: 104 weeks
- Result: positive
- Remarks: The mechanism or mode of action is not relevant in humans.

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

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
# Fipronil Formulation

<table>
<thead>
<tr>
<th>Species</th>
<th>Application Route</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>Ingestion</td>
<td>negative</td>
</tr>
</tbody>
</table>

**Effects on foetal development**
- 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 concentrations of 10 mg/kg bw or less.

### Ethanol:
- **Species**: Rat
- **NOAEL**: 1,280 mg/kg
- **LOAEL**: 3,156 mg/kg
- **Application Route**: Ingestion
- **Exposure time**: 90 Days

### Aspiration toxicity
Not classified based on available information.

**Repeated dose toxicity**

### Components:

#### Ethanol:
- **Species**: Rat
- **NOAEL**: 5 mg/kg
- **LOAEL**: 10 mg/kg
- **Application Route**: Skin contact
- **Exposure time**: 21 Days
- **Method**: OECD Test Guideline 410

#### Fipronil (ISO):
- **Species**: Rabbit
- **NOAEL**: 5 mg/kg
- **LOAEL**: 10 mg/kg
- **Application Route**: Ingestion
- **Exposure time**: 89 Weeks

- **Species**: Rat, male
- **NOAEL**: 0.059 mg/kg
- **LOAEL**: 0.019 mg/kg
- **Application Route**: Ingestion
- **Exposure time**: 89 Weeks

- **Species**: Rat
- **NOAEL**: 0.059 mg/kg
- **LOAEL**: 0.019 mg/kg
- **Application Route**: Ingestion
- **Exposure time**: 89 Weeks
12. ECOLOGICAL INFORMATION

Ecotoxicity

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
 Exposure time: 48 h
 Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants
 Exposure time: 72 h
 Method: OECD Test Guideline 201

Ethanol:
 Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 1,000 mg/l
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates
 Exposure time: 48 h

Toxicity to algae/aquatic plants
 Exposure time: 72 h

Fipronil (ISO):
ToFish Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 85.2 µg/l Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Mysisidea bahia (oosumm 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 toxicity) : 1,000

Toxicity to fish (Chronic toxicity) : NOEC (Cyprinodon variegatus (sheepshead minnow)): 2.9 µg/l Exposure time: 35 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Mysidopsis bahia (oosumm shrimp)): 0.0077 µg/l Exposure time: 28 d

M-Factor (Chronic aquatic toxicity) : 10,000

Toxicity to microorganisms : EC50: > 1,000 mg/l Exposure time: 3 h

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):
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

Mobility in soil
No data available

Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: Dispose of in accordance with local regulations.
Contaminated packaging:
Empty containers should be taken to an approved waste handling 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.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG
UN number: UN 1170
Proper shipping name: ETHANOL SOLUTION
Class: 3
Packing group: III
Labels: 3

IATA-DGR
UN/ID No.: UN 1170
Proper shipping name: Ethanol solution
Class: 3
Packing group: III
Labels: Flammable Liquids
Packing instruction (cargo): 366
Fipronil Formulation

Version 1.3  Revision Date: 2021/04/09  SDS Number: 4789370-00004  Date of last issue: 2020/10/10  Date of first issue: 2019/08/27

- **Packing instruction (passenger aircraft):** 355

**IMDG-Code**
- **UN number:** UN 1170
- **Proper shipping name:** ETHANOL SOLUTION (Fipronil (ISO))
- **Class:** 3
- **Packing group:** III
- **Labels:** 3
- **EmS Code:** F-E, S-D
- **Marine pollutant:** yes

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable for product as supplied.

**National Regulations**

- **GB 6944/12268**
  - **UN number:** UN 1170
  - **Proper shipping name:** ETHANOL SOLUTION
  - **Class:** 3
  - **Packing group:** III
  - **Labels:** 3

**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.

**15. REGULATORY INFORMATION**

**National regulatory information**

- **Law on the Prevention and Control of Occupational Diseases**

**Regulations on Safety Management of Hazardous Chemicals**
- **Catalogue of Hazardous Chemicals:** Listed
- **Identification of Major Hazard Installations for Hazardous Chemicals (GB 18218)**
  - | No. / Code | Chemical name / Category | Threshold quantity |
  - | J5 | Acute toxic | 500 t |
  - | W5.4 | Flammable liquids | 5,000 t |

**The components of this product are reported in the following inventories:**
- **AICS:** not determined
- **DSL:** not determined
- **IECSC:** not determined
SAFETY DATA SHEET
according to GB/T 16483 and GB/T 17519

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16. OTHER INFORMATION

Further information

Date format: yyyy/mm/dd

Full text of other abbreviations
ACGIH: USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI: ACGIH - Biological Exposure Indices (BEI)
CN OEL: Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.

ACGIH / TWA: 8-hour, time-weighted average
ACGIH / STEL: Short-term exposure limit
CN OEL / PC-TWA: Permissible concentration - time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogenic, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; 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; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; 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; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System
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Disclaimer

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.

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