SAFETY DATA SHEET
according to the Hazardous Products Regulations

Fipronil Formulation

Version 2.5  Revision Date: 09/30/2023  SDS Number: 4789402-00010  Date of last issue: 04/04/2023
Date of first issue: 08/27/2019

SECTION 1. IDENTIFICATION

Product name: Fipronil Formulation
Other means of identification: No data available

Manufacturer or supplier's details
Company name of supplier: Merck & Co., Inc
Address: 126 E. Lincoln Avenue
Rahway, New Jersey U.S.A. 07065
Telephone: 908-740-4000
Emergency telephone: 1-908-423-6000
E-mail address: EHSDATASTEWARD@merck.com

Recommended use of the chemical and restrictions on use
Recommended use: Veterinary product
Restrictions on use: Not applicable

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations
Flammable liquids: Category 3
Acute toxicity (Oral): Category 4
Acute toxicity (Inhalation): Category 3
Skin irritation: Category 2
Eye irritation: Category 2A
Specific target organ toxicity - repeated exposure: Category 1 (Central nervous system, Kidney)

GHS label elements
Hazard pictograms:

Signal Word: Danger
Hazard Statements:
H226 Flammable liquid and vapor.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H372 Causes damage to organs (Central nervous system, Kidney) through prolonged or repeated exposure.
Precautionary Statements:

**Prevention:**
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P260 Do not breathe mist or vapors.
- 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.
- P280 Wear protective gloves, protective clothing, eye protection and face protection.

**Response:**
- P301 + P312 + P330 IF SWALLOWED: Call a doctor if you feel unwell. Rinse mouth.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a 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 attention if you feel unwell.
- P332 + P313 If skin irritation occurs: Get medical attention.
- P337 + P313 If eye irritation persists: Get medical attention.
- P362 + P364 Take off contaminated clothing and wash it before reuse.

**Storage:**
- P405 Store locked up.

**Disposal:**
- P501 Dispose of contents and container to an approved waste disposal plant.

Other hazards:
Vapors may form explosive mixture with air.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance / Mixture:** Mixture

**Components**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common Name/Synonym</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Butoxyethanol</td>
<td>1-Butoxy-2-hydroxyethan</td>
<td>111-76-2</td>
<td>&gt;= 80 - &lt;= 100 *</td>
</tr>
<tr>
<td>Ethanol#</td>
<td>Ethyl alcohol</td>
<td>64-17-5</td>
<td>&gt;= 10 - &lt; 30</td>
</tr>
<tr>
<td>Fipronil</td>
<td>5-Amino-1-[2,6-dichloro-4-[(trifluoromethyl)phenyl]-4-[(trifluoromethyl)sulfinyl]-1H-pyrazole-3-]</td>
<td>120068-37-3</td>
<td>&gt;= 1 - &lt; 5 *</td>
</tr>
</tbody>
</table>
SECTION 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.

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.

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. Causes skin irritation. Causes serious eye irritation. Toxic if inhaled. Causes damage to organs through prolonged or repeated exposure. There may be delayed neurological effects, including brain oedema. Must not be confused with organophosphorous compounds!

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.

SECTION 5. FIRE-FIGHTING MEASURES

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

Unsuitable extinguishing media: High volume water jet

Specific hazards during fire: Do not use a solid water stream as it may scatter and spread
fighting fire. Flash back possible over considerable distance. Vapors may form explosive mixtures with air. Exposure to combustion products may be a hazard to health.

Hazardous combustion products:
- Nitrogen oxides (NOx)
- Sulfur 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 fire-fighters:
- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
- Remove all sources of ignition.
- Use personal protective equipment.
- Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

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.

Methods and materials for containment and cleaning up:
- Non-sparking tools should be used.
- Soak up with inert absorbent material.
- Suppress (knock down) gases/vapors/mists with a water spray jet.
- For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.
- Clean up remaining materials from spill with suitable absorbent.
- 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 determine which regulations are applicable.
- Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.
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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 equipment.

Advice on safe handling: Do not get on skin or clothing. Do not breathe mist or vapors. 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 assessment. 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.


Materials to avoid: 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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients 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>TWA</td>
<td>20 ppm 97 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>20 ppm</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWAEV</td>
<td>20 ppm</td>
<td>CA QC OEL</td>
</tr>
</tbody>
</table>
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<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>Ethanol</td>
<td>64-17-5</td>
<td>TWA 1,000 ppm</td>
<td>CA AB OEL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,880 mg/m³</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 1,000 ppm</td>
<td>CA BC OEL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 1,000 ppm</td>
<td>CA QC OEL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fipronil</td>
<td>120068-37-3</td>
<td>TWA 2 µg/m³ (OEB 4)</td>
<td>Internal</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Further information: Skin

Wipe limit 20 µg/100 cm² Internal

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 (As soon as possible after exposure ceases)</td>
<td>200 mg/g creatinine</td>
<td>ACGIH BEI</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 vapor type

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.

Eye 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.

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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: liquid
Color: yellow
Odor: characteristic
Odor 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
Flammability (liquids): Not applicable
Upper explosion limit / Upper flammability limit: No data available
Lower explosion limit / Lower flammability limit: No data available
Vapor pressure: No data available
Relative vapor density: 0.91 - 0.95
Relative density: 0.91 - 0.95
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SECTION 10. STABILITY AND REACTIVITY

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

Conditions to avoid: Heat, flames and sparks.
Incompatible materials: Oxidizing agents
Hazardous decomposition products: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
- Inhalation
- Skin contact
- Ingestion
- Eye contact

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: vapor
   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: vapor
   Method: Expert judgment
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: vapor

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

Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Components:

2-Butoxyethanol:
Test Type: Maximization Test
Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

Ethanol:
Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Result: negative
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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 mammalian 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

Fipronil:
Genotoxicity in vitro  :  Test Type: Bacterial reverse mutation assay (AMES)
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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: Ingestion (vapor)
Exposure time: 2 Years
Result: negative

Fipronil:
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

Effects on fetal development:
- Test Type: Embryo-fetal development
  - Species: Rat
  - Application Route: Ingestion
  - Result: negative
- Test Type: Embryo-fetal development
  - Species: Rat
  - Application Route: inhalation (vapor)
  - Result: negative

Ethanol:

Effects on fertility:
- Test Type: Two-generation reproduction toxicity study
  - Species: Mouse
  - Application Route: Ingestion
  - Result: negative

Fipronil:

Effects on fertility:
- Test Type: Two-generation reproduction toxicity study
  - Species: Rat
  - Application Route: Ingestion
  - Result: negative

Effects on fetal development:
- Test Type: Embryo-fetal 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
Causes damage to organs (Central nervous system, Kidney) through prolonged or repeated exposure.

Components:

Fipronil:
- Routes of exposure: 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.
Repeate dose toxicity

Components:

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

Fipronil:
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

Aspiration toxicity
Not classified based on available information.

SECTION 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: 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

Toxicity to fish (Chronic toxicity) : NOEC (Danio rerio (zebra fish)): > 100 mg/l
Exposure time: 21 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): 134 mg/l
Exposure time: 21 d
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 : EC50 (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 daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 9.6 mg/l
Exposure time: 9 d

Toxicity to microorganisms : EC50 (Pseudomonas putida): 6,500 mg/l
Exposure time: 16 h

Fipronil:
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

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 (opossum shrimp)): 0.0077 µg/l
Exposure time: 28 d

Toxicity to microorganisms : EC50: > 1,000 mg/l
Exposure time: 3 h
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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:
Biodegradability: Result: Not readily biodegradable.
Biodegradation: 47 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

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:
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

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: Do not dispose of waste into sewer.
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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG
UN number: UN 1992
Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethanol, Fipronil (ISO))
Class: 3
Subsidiary risk: 6.1
Packing group: III
Labels: 3 (6.1)
Environmentally hazardous: no

IATA-DGR
UN/ID No.: UN 1992
Proper shipping name: Flammable liquid, toxic, n.o.s. (Ethanol, Fipronil)
Class: 3
Subsidiary risk: 6.1
Packing group: III
Labels: Flammable Liquids, Toxic
Packing instruction (cargo aircraft): 366
Packing instruction (passenger aircraft): 355

IMDG-Code
UN number: UN 1992
Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethanol, Fipronil)
Class: 3
Subsidiary risk: 6.1
Packing group: III
Labels: 3 (6.1)
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.

Domestic regulation

TDG
UN number: UN 1992
Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethanol, Fipronil)
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Class: 3
Subsidiary risk: 6.1
Packing group: III
Labels: 3 (6.1)
ERG Code: 131
Marine pollutant: yes (Fipronil)

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.

SECTION 15. REGULATORY INFORMATION

The ingredients of this product are reported in the following inventories:
AICS: not determined
DSL: not determined
IECSC: not determined

SECTION 16. OTHER INFORMATION

Full text of other abbreviations
ACGIH: USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI: ACGIH - Biological Exposure Indices (BEI)
CA BC OEL: Canada. British Columbia OEL
CA QC OEL: Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA: 8-hour, time-weighted average
ACGIH / STEL: Short-term exposure limit
CA AB OEL / TWA: 8-hour Occupational exposure limit
CA BC OEL / TWA: 8-hour time weighted average
CA BC OEL / STEL: short-term exposure limit
CA QC OEL / TWAEV: Time-weighted average exposure value
CA QC OEL / STEV: Short-term exposure value

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 - Carcinogen, 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 con-
SAFETY DATA SHEET
according to the Hazardous Products Regulations

Fipronil Formulation

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