SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: TOPCHOICE™ INSECTICIDE
MSDS Number: 102000012961
EPA Registration No.: 432-1217
Product Use: Insecticide for pest control operators and commercial use only to control fire ants in turfgrass and landscape beds. In addition, mole crickets, fleas, ticks and nuisance ants are controlled for a limited time by the fire ant treatment.

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call 1-800-334-7577 (24 hours/day)
For Product Information call 1-800-331-2867

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS-No.</th>
<th>Average % by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fipronil</td>
<td>120068-37-3</td>
<td>0.0143</td>
</tr>
</tbody>
</table>

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview: Caution! Harmful if absorbed through skin. Causes eye irritation. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling.

Physical State: solid granular

Odor: odourless

Appearance: grey

Routes of Exposure: Ingestion, Eye contact, Skin Absorption, Inhalation

Immediate Effects

Eye: Causes eye irritation. Do not get in eyes.

Skin: Harmful if absorbed through skin. Avoid contact with skin and clothing. May cause skin irritation.
Ingestion

Ingestion of large amounts may be harmful (see Signs and Symptoms). Do not take internally.

Inhalation

Avoid breathing dust. No specific effects on humans are known under normal use conditions.

Chronic or Delayed Long-Term

This product does not contain any ingredients designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

SECTION 4. FIRST AID MEASURES

General

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

Eye

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Skin

Take off all contaminated clothing immediately. Rinse immediately with plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.

Ingestion

Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Inhalation

Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Notes to Physician

Signs and Symptoms

In severe cases of overexposure by oral ingestion, lethargy, muscle tremors, and, in extreme cases, possibly convulsions, may occur.

Treatment

There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point

not applicable

Suitable Extinguishing Media

water spray, foam, dry chemical, carbon dioxide (CO2)
Fire Fighting Instructions

Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Dike area to prevent runoff and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated.

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods for Cleaning Up
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional Advice
Use personal protective equipment. Do not allow material to enter streams, sewers, or other waterways.

SECTION 7. HANDLING AND STORAGE

Handling Procedures
Handle and open container in a manner as to prevent spillage.

Storing Procedures
Do not contaminate water, food, or feed by storage or disposal.
Store in original container. Store in an area that is out of reach of children and animals, away from the home or home garden.

Work/Hygienic Procedures
Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. As soon as practical, wash thoroughly and change into clean clothing.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection
Follow all label instructions. Educate and train employees in safe use of the product.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.
Engineering Controls  
Ensure adequate ventilation. Use with local exhaust ventilation.

Eye/Face Protection  
Safety glasses with side-shields

Hand Protection  
Waterproof gloves

Body Protection  
Wear long-sleeved shirt and long pants and shoes plus socks.

Respiratory Protection  
When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or Industry recommendations.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>grey</td>
</tr>
<tr>
<td>Physical State</td>
<td>solid granular</td>
</tr>
<tr>
<td>Odor</td>
<td>odourless</td>
</tr>
<tr>
<td>pH</td>
<td>8.1</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>49.3 lb/cu ft</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>dispersible</td>
</tr>
</tbody>
</table>

SECTION 10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Stability</td>
<td>Stable under normal conditions.</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>Exposure to sunlight.</td>
</tr>
<tr>
<td></td>
<td>Exposure to extreme heat.</td>
</tr>
<tr>
<td>Incompatibility</td>
<td>strong acids</td>
</tr>
<tr>
<td></td>
<td>strong bases</td>
</tr>
<tr>
<td></td>
<td>strong oxidizing agents</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Thermal decomposition can lead to release of:</td>
</tr>
<tr>
<td></td>
<td>Carbon oxides</td>
</tr>
<tr>
<td></td>
<td>sulphur compounds</td>
</tr>
</tbody>
</table>

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The inhalation LC50 study was bridged from a similar granular formulation containing the active ingredient, fipronil. The non-acute
Acute Oral Toxicity  male/female rat: LD₅₀: > 5,000 mg/kg

Acute Dermal Toxicity  male/female rabbit: LD₅₀: > 2,000 mg/kg

Acute Inhalation Toxicity  male/female rat: LC₅₀: > 5.2 mg/l
  Exposure time: 4 h
  Determined in the form of dust.
  (actual)

  male/female rat: LC₅₀: > 20 mg/l
  Exposure time: 1 h
  Determined in the form of dust.
  Extrapolated from the 4 hr LC₅₀.
  (actual)

Skin Irritation  rabbit: non-irritant

Eye Irritation  rabbit: Mild eye irritation

Skin Irritation  guinea pig: Non-sensitizing

Chronic Toxicity  Fipronil caused liver, kidney or thyroid effects and/or neurobehavioral effects (e.g., tremors) in chronic toxicity studies in rats and dogs. Fipronil did not induce any microscopic lesions in the neural tissues.

Assessment Carcinogenicity
  The EPA has classified fipronil as a Category C carcinogen based on thyroid tumors in rats only. These tumors are produced by a mechanism which is not relevant to human cancer. Fipronil did not produce an increase in tumor incidence in mice.

ACGIH  None.
NTP  None.
IARC  None.
OSHA  None.

Reproductive & Developmental Toxicity  REPRODUCTION: Fipronil was not considered a primary reproductive toxicant in rats. Reproductive effects (e.g., decreased pup body weights) were observed but were considered secondary to maternal toxicity.

DEVELOPMENTAL TOXICITY: Fipronil was not a developmental toxicant in rats and rabbits.

Neurotoxicity  Fipronil caused transient neurobehavioral effects (e.g., tremors) in neurotoxicity studies in rats. Delays in developmental landmarks were observed in rats at
maternally toxic doses.

**Mutagenicity**

Fipronil was not genotoxic in a battery of in vitro and in vivo mutagenicity studies.

### SECTION 12. ECOLOGICAL INFORMATION

**Toxicity to Fish**

Lepomis macrochirus (Bluegill sunfish)
flow-through test
LC50: 85 µg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient fipronil.
Mean concentration.

Rainbow trout (Oncorhynchus mykiss)
flow-through test
LC50: 248 µg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient fipronil.
Mean concentration.

**Acute Toxicity to Aquatic Invertebrates**

Daphnia
flow-through test
EC50: 190 µg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient fipronil.
Mean concentration.

**Toxicity to Other Organisms**

Mallard duck
LC50: > 5,000 mg/kg
Exposure time: 8 d
The value mentioned relates to the active ingredient fipronil.
Dietary concentrations. Mean concentration.

Bobwhite quail
LC50: 48 mg/kg
Exposure time: 8 d
The value mentioned relates to the active ingredient fipronil.
Dietary concentrations. Mean concentration.

**Environmental Precautions**

Toxic to fish. Toxic to birds. This product is toxic to aquatic and estuarine invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product only as specified on the label.
SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance
Pesticide wastes are acutely hazardous. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal
Do not re-use empty containers. Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities. If burned, stay out of smoke.

SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Not regulated for Domestic Surface Transportation

FREIGHT CLASSIFICATION:
Insecticides or Fungicides, N.O.I.; other than poison

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 432-1217

US Federal Regulations
TSCA list
None.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.

SARA Title III - Section 302 - Notification and Information
None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting
None.

US States Regulatory Reporting
CA Prop65
This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients
None.

Canadian Regulations
Canadian Domestic Substance List
None.

Environmental
CERCLA
None.

Clean Water Section 307 Priority Pollutants
None.

Safe Drinking Water Act Maximum Contaminant Levels
None.

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):
Health - 1  Flammability - 0  Reactivity - 0  Others - none
0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: Re-numbered due to system update; Updated Sections as needed.

Revision Date: 07/15/2005

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