SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier
Trade name TOPCHOICE® INSECTICIDE
Product code (UVP) 05727986
SDS Number 102000012961
EPA Registration No. 432-1217

Relevant identified uses of the substance or mixture and uses advised against
Use Insecticide
Restrictions on use See product label for restrictions.

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

Responsible Department Email: SDSINFO.BCS-NA@bayer.com
Emergency telephone no.
Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577
Product Information Telephone Number 1-800-331-2867

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200
Specific target organ toxicity - single exposure: Category 3

Labelling in accordance with regulation HCS 29CFR §1910.1200

Signal word: Warning
Hazard statements
May cause respiratory irritation.
Precautionary statements
Avoid breathing dust.
Use only outdoors or in a well-ventilated area.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents/container in accordance with local regulation.

Hazards Not Otherwise Classified (HNOC)
No physical hazards not otherwise classified. No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice
When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Inhalation
Move to fresh air. If symptoms persist, call a physician. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.

Skin contact
Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Eye contact
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. Get medical attention if irritation develops and persists.

Ingestion
Call a physician or poison control center immediately. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Rinse out mouth and give water in small sips to drink. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms
Symptoms of Overexposure, Lethargy, Tremors, Convulsions

Indication of any immediate medical attention and special treatment needed

Treatment
Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.
SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable: Water spray, Foam, Dry chemical, Carbon dioxide (CO2)
Unsuitable: High volume water jet

Special hazards arising from the substance or mixture

Dangerous gases are evolved in the event of a fire.

Advice for firefighters

Special protective equipment for firefighters: Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information

Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point: Not applicable
Auto-ignition temperature: No data available
Lower explosion limit: Not applicable
Upper explosion limit: Not applicable
Explosivity: No data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

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

Methods and materials for containment and cleaning up

Methods for cleaning up: Avoid dust formation. Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice: Use personal protective equipment. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal.

Reference to other sections: Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.
SECTION 7: HANDLING AND STORAGE

Precautions for safe handling
Advice on safe handling Handle and open container in a manner as to prevent spillage. Avoid dust formation. Use only in area provided with appropriate exhaust ventilation.

Advice on protection against fire and explosion Dust may form explosive mixture in air. Take measures to prevent the build up of electrostatic charge. Keep away from heat and sources of ignition.

Hygiene measures Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Remove Personal Protective Equipment (PPE) immediately after handling this product. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities
Requirements for storage areas and containers Store in original container and out of the reach of children, preferably in a locked storage area. Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed.

SECTION 8: EXPOSURE CONTROLS/PERSOANL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
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</thead>
<tbody>
<tr>
<td>Fipronil</td>
<td>120068-37-3</td>
<td>0.035 mg/m3 (TWA)</td>
<td></td>
<td>OES BCS*</td>
</tr>
</tbody>
</table>

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

Exposure controls
Personal protective equipment
In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

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.

Hand protection Waterproof gloves
Eye protection Safety glasses with side-shields
Skin and body protection Wear long-sleeved shirt and long pants and shoes plus socks.
General protective measures 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
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<tr>
<td>Physical State</td>
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<tr>
<td>Odor</td>
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<tr>
<td>Odour Threshold</td>
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<td>pH</td>
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<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
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<tr>
<td>Vapor Density (Air = 1)</td>
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<tr>
<td>Bulk density</td>
<td>46 - 50 lbs/cu.ft.</td>
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<tr>
<td>Evaporation rate</td>
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</tr>
<tr>
<td>Boiling Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting / Freezing Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Water solubility</td>
<td>dispersible</td>
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<td>Minimum Ignition Energy</td>
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<tr>
<td>Decomposition temperature</td>
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<tr>
<td>Partition coefficient: n-octanol/water</td>
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</tr>
<tr>
<td>Viscosity</td>
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</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosivity</td>
<td>No data available</td>
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</table>

SECTION 10: STABILITY AND REACTIVITY

Reactivity

<table>
<thead>
<tr>
<th>Property</th>
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</thead>
<tbody>
<tr>
<td>Thermal decomposition</td>
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</tr>
<tr>
<td>Chemical stability</td>
<td>Stable under recommended storage conditions.</td>
</tr>
</tbody>
</table>
Possibility of hazardous reactions
No hazardous reactions when stored and handled according to prescribed instructions.

Conditions to avoid
Extremes of temperature and direct sunlight.
Heat, flames and sparks.

Incompatible materials
Strong acids, Strong bases, Strong oxidizing agents

Hazardous decomposition products
Thermal decomposition can lead to release of:
Carbon oxides
Sulphur compounds

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes
Ingestion, Eye contact, Skin Absorption, Inhalation

Immediate Effects
Eye
Causes eye irritation.

Skin
Harmful if absorbed through skin.

Inhalation
No specific effects on humans are known under normal use conditions.

Information on toxicological effects

Acute oral toxicity
LD50 (male/female combined Rat) > 5,000 mg/kg

Acute inhalation toxicity
LC50 (male/female combined Rat) > 5.16 mg/l
Exposure time: 4 h
Determined in the form of dust.
(actual)
Test conducted with a similar formulation.

Acute dermal toxicity
LD50 (male/female combined Rabbit) > 2,000 mg/kg

Skin corrosion/irritation
No skin irritation (Rabbit)

Serious eye damage/eye irritation
Mild eye irritation. (Rabbit)

Respiratory or skin sensitisation
Skin: Non-sensitizing. (Guinea pig)

Assessment STOT Specific target organ toxicity – repeated exposure
Fipronil caused specific target organ toxicity in experimental animal studies in the following organ(s):
Liver. Fipronil caused neurobehavioral effects and/or neuropathological changes in animal studies.

Assessment mutagenicity
Fipronil was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity
Fipronil caused an increased incidence of tumours in rats in the following organ(s): Thyroid. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to
Assessment toxicity to reproduction
Fipronil caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Fipronil is related to parental toxicity.

Assessment developmental toxicity
Fipronil did not cause developmental toxicity in rats and rabbits.

Further information
Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish
LC50 (Lepomis macrochirus (Bluegill sunfish)) = 0.0852 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient fipronil.

Chronic toxicity to fish
Cyprinodon variegatus (sheepshead minnow)
Early-life Stage
NOEC: = 0.0029 mg/l
Exposure time: 35 d
The value mentioned relates to the active ingredient fipronil.

Oncorhynchus mykiss (rainbow trout)
Early-life Stage
NOEC: = 0.015 mg/l
Exposure time: 90 d
The value mentioned relates to the active ingredient fipronil.

Toxicity to aquatic invertebrates
EC50 (Daphnia magna (Water flea)) = 0.19 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient fipronil.

LC50 (Mysidopsis bahia (mysid shrimp)) = 0.00014 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient fipronil.
Chronic toxicity to aquatic invertebrates
NOEC (Mysidopsis bahia (mysid shrimp)): = 0.0077 µg/l
Life Cycle; Exposure time: 28 d
The value mentioned relates to the active ingredient fipronil.

NOEC (Daphnia magna (Water flea)): = 0.0098 mg/l
Exposure time: 21 d
The value mentioned relates to the active ingredient fipronil.

Toxicity to aquatic plants
EC50 (Desmodesmus subspicatus (green algae)) = 0.068 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient fipronil.

NOEC (Desmodesmus subspicatus (green algae)) = 0.040 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient fipronil.

NOEC (Lemna gibba (gibbous duckweed)) = 0.16 mg/l
Exposure time: 14 d
The value mentioned relates to the active ingredient fipronil.

Biodegradability
Fipronil: Not rapidly biodegradable

Koc
Fipronil: Koc: 427 - 1278

Bioaccumulation
Fipronil: Bioconcentration factor (BCF) 321
Does not bioaccumulate.

Mobility in soil
Fipronil: Slightly mobile in soils

Environmental precautions
Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark.
Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.
Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites.
Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods
Product
Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

Contaminated packaging
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.
Consult state and local regulations regarding the proper disposal of container.

**RCRA Information**
Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

### SECTION 14: TRANSPORT INFORMATION

**49CFR**
Not dangerous goods / not hazardous material

**IMDG**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
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<tr>
<td>Class</td>
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<tr>
<td>Packaging group</td>
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<td>Marine pollutant</td>
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<td>Proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (FIPRONIL MIXTURE)</td>
</tr>
</tbody>
</table>

**IATA**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>3077</td>
</tr>
<tr>
<td>Class</td>
<td>9</td>
</tr>
<tr>
<td>Packaging group</td>
<td>III</td>
</tr>
<tr>
<td>Environm. Hazardous Mark</td>
<td>YES</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (FIPRONIL MIXTURE)</td>
</tr>
</tbody>
</table>

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

### SECTION 15: REGULATORY INFORMATION

- **EPA Registration No.** 432-1217
- **US Federal Regulations**
- **TSCA list**
  - Methyl oleate 112-62-9
- **US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)**
  - Not applicable.
- **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
Methyl oleate 112-62-9 RI

EPA/FIFRA Information:
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution!

Hazard statements: Harmful if absorbed through skin.
Causes eye irritation.
Avoid contact with skin, eyes and clothing.
Wash thoroughly with soap and water after handling.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms
49CFR Code of Federal Regulations, Title 49
ACGIH US. ACGIH Threshold Limit Values
ATE Acute toxicity estimate
CAS-Nr. Chemical Abstracts Service number
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
EINECS European inventory of existing commercial substances
ELINCS European list of notified chemical substances
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IMDG International Maritime Dangerous Goods
N.O.S. Not otherwise specified
NTP US. National Toxicology Program (NTP) Report on Carcinogens
OECD Organization for Economic Co-operation and Development
TDG Transportation of Dangerous Goods
TWA Time weighted average
UN United Nations
WHO World health organisation
SAFETY DATA SHEET

TOPCHOICE® INSECTICIDE
Version 4.0 / USA
102000012961

Revision Date: 04/11/2019
Print Date: 04/12/2019

NFPA 704 (National Fire Protection Association):
Health - 1  Flammability - 1  Instability - 0  Others - none

Health - 1  Flammability - 1  Physical Hazard - 0  PPE -
0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: The following sections have been revised: Section 2: Hazards Identification. Section 12. Ecological information. Section 14: Transport Information. Reviewed and updated for general editorial purposes.

Revision Date: 04/11/2019

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