Material Safety Data Sheet

Fipronil 96%TC

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IENTIFICATION

Chemical product name: Fipronil 96%TC

Common chemical name: FIPRONIL: 5-amino-1-(2,6-dichloro-4-(trifluoromethyl) phenyl)-4-((1,R,S)- (trifluoromethyl)sulfinyl)-1-H-pyrazole-3 -carbonitrile

Company information: Choice Chemicals Ltd.
Centre of City, No.249 Wuyi Road, Furong District,
Changsha,Hunan 410011,P.R.China
Tel: 0086 731 89856736
Fax: 0086 73189878447
E-mail: info@choice-chem.com

24 hr Emergency number: 0086 13298652316

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average by Weight
Fipronil	120068-37-3	96%

SECTION 3 - IDENTIFICATION OF HAZARDS

General advice:

First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or physician for treatment advice.

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

If inhaled:

Remove the affected individual into fresh air and keep the person calm.

If on skin:

Rinse skin immediately with plenty of water for 15 - 20 minutes.

If in eyes:

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

If swallowed:

Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Do not induce vomiting. Have person sip a glass of water if able to swallow.

Note to physician

Antidote: No known specific antidote.

Treatment: Treat symptomatically. Anticonvulsant therapy as routinely administered to humans. Based on animal studies diazepam and phenobarbital prevented convulsions. Due to the slow elimination of the active compound and its metabolites, the treatment must be continued for several days, gradually decreasing the dose of anticonvulsant based on the clinical response.

SECTION 4 - HAZARDS IDENTIFICATION

Emergency overview

WARNING:

May be fatal if absorbed through skin.

May be fatal if inhaled.

May be fatal if swallowed.

May cause moderate but temporary irritation to the eyes.

KEEP OUT OF REACH OF CHILDREN.

KEEP OUT OF REACH OF DOMESTIC ANIMALS.

Avoid contact with the skin, eyes and clothing.

Avoid inhalation of dusts/mists/vapours.

Wash thoroughly after handling.

See Product Label for additional precautionary statements.

State of matter: solid

Colour: beige

Odour: odourless

Potential health effects

Primary routes of exposure:

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for

gases include inhalation and eye contact. Skin contact may be a route of entry for liquified

gases.

Acute toxicity:

Moderately toxic after single ingestion. Moderately toxic after short-term skin contact. Slightly toxic after
short-term inhalation.

Irritation / corrosion:

May cause slight irritation to the skin. Moderately irritating to the eyes.

Sensitization:

Skin sensitizing effects were not observed in animal studies.

Signs and symptoms of overexposure:

CNS stimulation, tremors, convulsions

Potential environmental effects

Aquatic toxicity:

Very toxic (acute effect) to aquatic organisms.

Terrestrial toxicity:

With high probability not acutely harmful to terrestrial organisms.

SECTION 5 - FIRE FIGHTING MEASURES

Flash point:	not applicable		
Autoignition:	not applicable		
Flammability:		not highly flammable	(Directive 84/449/EEC, A.10)
Self-ignition temperature:			not self-igniting

Suitable extinguishing media:

foam, dry powder, carbon dioxide, water spray

Hazards during fire-fighting:

carbon monoxide, carbon dioxide, hydrogen fluoride, Hydrogen chloride, halogenated hydrocarbons,
Hydrocarbons, nitrogen oxides, sulfur oxides, acid halides, halogenated compounds
The substances/groups of substances mentioned can be released if the product is involved in a fire.

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions:

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions.

Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

Environmental precautions:

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

Cleanup:

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water.

Collect wash water for approved disposal.

SECTION 7 - HANDING AND STORAGE

Handling

General advice:

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat.
Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

Storage

General advice:

Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame.
Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.

Storage incompatibility:

General advice: Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

Temperature tolerance

Protect from temperatures above: 40 °C
Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL, PROTECTION

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Form:	free flowing fine granules	
Odour:	odourless	
Colour:	beige	
pH value:	9.1 - 9.3	
Melting point:		not applicable, The substance / product decomposes therefore not determined.
Boiling point:		The product is a non-volatile solid., not applicable
Vapour pressure:		negligible
Bulk density:	500 kg/m3	
Partitioning coefficient n-octanol/water (log Pow):	3.5	
Solubility in water:		dispersible

SECTION 10 - STABILITY AND REACTIVITY

Conditions to avoid:

Avoid all sources of ignition: heat, sparks, open flame. Avoid extreme temperatures. Avoid

prolonged exposure to extreme heat. Avoid contamination. Avoid electro-static discharge. Avoid prolonged storage. This product may form an explosive mixture if: 1. the dust is suspended in the atmosphere as a dust cloud AND 2. the concentration of the dust is above the lower explosion limit (LEL) AND 3. the limiting oxygen concentration (LOC) is exceeded.

Substances to avoid:

strong oxidizing agents

Hazardous reactions:

The product is chemically stable. Hazardous polymerization will not occur. No hazardous reactions if stored and handled as prescribed/indicated.

Decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated., Prolonged thermal loading can result in products of degradation being given off.

Thermal decomposition:

Possible thermal decomposition products: carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Sulphur dioxide, Hydrogen chloride, hydrogen fluoride, halogenated hydrocarbons, Hydrocarbons Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.

Corrosion to metals:

Corrosive effects to metal are not anticipated.

Oxidizing properties:

Not an oxidizer.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute toxicity

Oral:

Type of value: LD50

Species: rat

Value: 177 mg/kg

Inhalation:

Type of value: LC50

Species: rat (male/female)

Value: 2.52 mg/l (calculated)

Exposure time: 1 h

Irritation / corrosion

Skin:

Species: rabbit

Result: Slightly irritating.

Eye:
Species: rabbit
Result: moderately irritating
Sensitization:
Guinea pig maximization test
Result: Skin sensitizing effects were not observed in animal studies.
Genetic toxicity
Information on: fipronil
Results from a number of mutagenicity studies with microorganisms, mammalian cell culture and mammals are available. Taking into account all of the information, there is no indication that the substance is mutagenic.

Carcinogenicity
Information on: fipronil
In long-term studies in rats the substance induced thyroid tumors. In long-term studies in rodents exposed to high doses, a tumorigenic effect was found; however, these results are thought to be due to a rodent-specific liver effect that is not relevant to humans.

Reproductive toxicity
Information on: fipronil
Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Development:
Information on: fipronil
No indications of a developmental toxic / teratogenic effect were seen in animal studies.

SECTION 12 - ECOLOGICAL INFORMATION

Fish
Acute:
Oncorhynchus mykiss/LC50 (96 h): 0.291 mg/l
Aquatic invertebrates
Acute:
Daphnia magna/LC50 (48 h): 0.22 mg/l
Aquatic plants
Toxicity to aquatic plants:
green algae/EC50 (96 h): 0.21 mg/l

Non-Mammals

Information on: fipronil

Other terrestrial non-mammals:

bobwhite quail/LD50: > 2,000 mg/kg

bobwhite quail/LC50: > 5,000 ppm

Honey bee/LD50: > 100 ug/bee

mallard duck/LC50: > 5,000 ppm

Degradability / Persistence

Biological / Abiological Degradation

Evaluation: Not readily biodegradable (by OECD criteria).

Other adverse effects:

The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

SECTION 13 - Disposal considerations

Waste disposal of substance:

Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA:

This product is not regulated by RCRA.

SECTION 14 - TRANSPORT INFORMATION

Proper shipping name: Pesticide, Solid, Toxic, N.O.S.

UN number: 2588

Class: 6.1

Marine pollutant: Yes

Package group: II

SECTION 15 - REGULATORY INFORMATION

Federal Regulations

Registration status:

Chemical	TSCA, US	blocked / not listed
Crop Protection	TSCA, US	released / exempt

OSHA hazard category: Acute target organ effects reported; Toxic - oral; Toxic - dermal; Highly toxic - inhalation

EPCRA 311/312 (Hazard categories): Acute; Chronic

State regulations

CA Prop. 65:

There are no listed chemicals in this product.

SECTION 16 - OTHER INFORMATION

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