SECTION 1: IDENTIFICATION OF THE HAZARDOUS CHEMICAL AND OF THE SUPPLIER

1.1 Product identifier

Trade name MAKFOR F

Product code (UVP) 79717598

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use Insecticide

1.3 Details of the supplier of the safety data sheet

Supplier

Bayer AG
Kaiser-Wilhelm-Allee 1
51373 Leverkusen
Germany

Local distributor
Bayer Co. (Malaysia) Sdn Bhd
B-19-1 & B-19-2,
The Ascent Paradigm,
No. 1, Jalan SS 7/26A, Kelana Jaya,
47301 Petaling Jaya, Selangor.
Malaysia

Telephone 03 7801 3088 (office hours)

Telefax 03 7886 3338

1.4 Emergency telephone no.

In case of POISONING, please contact Malaysian Emergency Response Services (999)

Global Incident Response Hotline (24h) +1 (760) 476-3964 (Company 3E for Bayer AG, Crop Science Division)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to the Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

Chronic aquatic toxicity: Category 3
H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to the Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

Hazard label for supply/use required.

Hazardous components which must be listed on the label:

- Fipronil

Hazard statements

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P501 Dispose of contents/container in accordance with local regulation.

2.3 Other hazards

No additional hazards known beside those mentioned.

Fipronil: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

SECTION 3: COMPOSITION AND INFORMATION OF THE INGREDIENTS OF THE HAZARDOUS CHEMICAL

3.2 Mixtures

Chemical nature

Bait (ready for use) (RB)
Fipronil 0,05%

Hazardous components

Name	CAS-No.	Conc. [%]
Fipronil	120068-37-3	0.05
1,2-Benzisothiazol-3(2H)-one	2634-33-5	>= 0.05 – < 1.0
reaction mass of 5-chloro-2- methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	>= 0.0015 – < 0.06

Further information

1,2-Benzisothiazol-3(2H)-one	2634-33-5	M-Factor: 10 (acute)

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice Move out of dangerous area. Remove contaminated clothing immediately and dispose of safely.

Inhalation Move to fresh air. Call a physician or poison control center immediately.

Skin contact	Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. If symptoms persist, call a physician.
Eye contact	In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	Symptoms and hazards refer to effects observed after intake of significant amounts of the active ingredient(s)., The following symptoms may occur:, Restlessness, anxiety, Tremors

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	There is no specific antidote. Carefully monitor the respiratory functions. In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens. Oxygen or artificial respiration if needed. Keep respiratory tract clear. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Symptoms of poisoning may appear several hours later. Keep under medical supervision for at least 48 hours.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable	Water spray, Carbon dioxide (CO2), Foam, Dry powder
Unsuitable	High volume water jet
5.2 Special hazards arising from the substance or mixture	In the event of fire the following may be released:, Carbon monoxide (CO), Nitrogen oxides (NOx), Sulphur oxides, Hydrogen chloride (HCl), Hydrogen fluoride

5.3 Advice for firefighters

Special protective equipment for firefighters	In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.
Further information	Fight fire from upwind position. Keep out of smoke. Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions	Do not allow to get into surface water, drains and ground water.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	The nature of this product, when contained in commercial packs, makes spillage unlikely. However, if significant amounts are spilled nevertheless, the following advice is applicable. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container.
Additional advice	Check also for any local site procedures.
6.4 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

7.1 Precautions for safe handling

Advice on safe handling	Ensure adequate ventilation. No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Avoid contact with skin, eyes and clothing.
Hygiene measures	Avoid contact with skin, eyes and clothing. Keep working clothes separately. Remove soiled clothing immediately and clean thoroughly before using again. Wash hands immediately after work, if necessary take a shower. Smoking, eating and drinking should be prohibited in the application area.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Store in a place accessible by authorized persons only. Keep containers tightly closed in a dry, cool and well-ventilated place. Store at room temperature. Keep away from direct sunlight.
Advice on common storage	Keep away from food, drink and animal feedingstuffs.
Suitable materials	Use of Bulk packaging at formulation site for temporary transport only! Polyethylene film within an outer package
7.3 Specific end use(s)	Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Fipronil	120068-37-3	0.035 mg/m3 (TWA)		OES BCS*

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

8.2 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	Respiratory protection is not required under anticipated circumstances of exposure. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.
Hand protection	Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet. Material: Nitrile rubber Rate of permeability: > 480 min Glove thickness: > 0.4 mm Directive: Protective gloves complying with EN 374.
Eye protection	Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).
Skin and body protection	Wear standard coveralls and Category 3 Type 4 suit. If there is a risk of significant exposure, consider a higher protective type suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.
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

9.1 Information on basic physical and chemical properties

Form	gel
Colour	brown
Odour	weak, characteristic
Odour Threshold	No data available
pH	5 - 7 (1 %) (23 °C) (deionized water)
Melting point/range	No data available
Boiling Point	No data available
Flash point	No data available

Flammability	No data available
Auto-ignition temperature	No data available
Minimum ignition energy	No data available
Self-accelarating decomposition temperature (SADT)	No data available
Upper explosion limit	No data available
Lower explosion limit	No data available
Vapour pressure	No data available
Evaporation rate	No data available
Relative vapour density	No data available
Relative density	No data available
Density	ca. 1.18 g/cm³ (20 °C)
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Viscosity, dynamic	>= 5,000 mPa.s (20 °C) Velocity gradient 7.5 /s
Viscosity, kinematic	No data available
Oxidizing properties	No data available
Explosivity	No data available
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.

10.4 Conditions to avoid	Extremes of temperature and direct sunlight.
10.5 Incompatible materials	Store only in the original container.
10.6 Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity	LD50 (Rat) > 2,000 mg/kg
Acute inhalation toxicity	Not relevant
Acute dermal toxicity	LD50 (Rat) > 2,000 mg/kg
Skin corrosion/irritation	Slight irritant effect - does not require labelling. (Rabbit)
Serious eye damage/eye irritation	Slight irritant effect - does not require labelling. (Rabbit)
Respiratory or skin sensitisation	Skin: Non-sensitizing. (Guinea pig) OECD Test Guideline 406, Buehler test

Assessment STOT Specific target organ toxicity – single exposure

Fipronil: Based on available data, the classification criteria are not met.

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 humans.

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.

Aspiration hazard

Based on available data, the classification criteria are not met.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) 0.25 mg/l Exposure time: 96 h 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)) 0.14 µg/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 Exposure time: 28 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.

12.2 Persistence and degradability

Biodegradability	Fipronil: Not rapidly biodegradable
Koc	Fipronil: Koc: 427 - 1278

12.3 Bioaccumulative potential

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

12.4 Mobility in soil

Mobility in soil	Fipronil: Slightly mobile in soils

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment	Fipronil: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

Additional ecological information	No other effects to be mentioned.

SECTION 13: DISPOSAL INFORMATION

13.1 Waste treatment methods

Product	In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant.
Contaminated packaging	Not completely emptied packagings should be disposed of as hazardous waste.

SECTION 14: TRANSPORT INFORMATION

ADR/RID/ADN

14.1 UN number	**3082**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FIPRONIL SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packaging Group	III
14.5 Environm. Hazardous Mark	YES
Hazard no.	90
Tunnel Code	-

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

IMDG

14.1 UN number	**3082**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FIPRONIL SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packaging Group	III
14.5 Marine pollutant	YES

IATA

14.1 UN number	**3082**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FIPRONIL SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packaging Group	III
14.5 Environm. Hazardous Mark	YES

14.6 Special precautions for user
See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Further information

WHO-classification: III (Slightly hazardous)

SECTION 16: OTHER INFORMATION

The information contained within this Safety Data Sheet is in accordance to The Industry Code of Practice on Chemical Classification and Hazard Communication 2013 (ICOP) which is promulgated under Section 37 of Occupational Safety and Health Act 1994 (OSHA 1994) and serves as a guidance to chemical suppliers to comply with the provisions of Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U. (A) 310/2013] which have been gazetted on 11 October 2013, hereinafter is referred to as "the Regulations". This data sheet complements the user's instructions, but does not replace them. The information contained therein is based on the knowledge available about the product concerned at the time it was compiled. Users are further reminded of the possible risks of using a product for purposes other than those for which it was intended. The required information complies with the current Malaysia legislation, including the Pesticides Act 1974. Addressees are requested to observe any additional national requirements.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.