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

1.1 Product identifier

Trade name	FICAM W INSECTICIDE
Product code (UVP)	05935598

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

Use	Insecticide
EPA-Nr.	HSR000451

1.3 Details of the supplier of the safety data sheet

Supplier	Bayer CropScience Pty Ltd Level 1, 8 Redfern Road, Hawthorn East, Vic 3123 Australia
Telephone	+61 3 9248 6612
Telefax	+61 3 9248 6800
Local agent	Bayer New Zealand Limited 3 Argus Place Hillcrest Auckland 0627 New Zealand Telephone: 0800 428 246 Telefax: (09) 441 8645

1.4 Emergency telephone no.

Emergency Number	0800 734 607 (24hr)
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

Classified as hazardous according to the criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001

6.1B H300	Fatal if swallowed.
6.1D H312	Harmful in contact with skin.
6.1C H331	Toxic if inhaled.

6.9A
H372 Causes damage to organs through prolonged or repeated exposure.

9.1A
H410 Very toxic to aquatic life with long lasting effects.

9.3A
H431 Very toxic to terrestrial vertebrates.

9.4A
H441 Very toxic to terrestrial invertebrates.

2.2 Label elements

Labelling in accordance with Hazardous Substances Identification Regulations 2001

Hazard label for supply/use required.

Signal word: Danger

Hazard statements

H300	Fatal if swallowed.
H312	Harmful in contact with skin.
H331	Toxic if inhaled.
H372	Causes damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.
H431	Very toxic to terrestrial vertebrates.
H441	Very toxic to terrestrial invertebrates.

Precautionary statements

P102	Keep out of reach of children.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P308 + P311	IF exposed or concerned: Call a POISON CENTER/ doctor/ physician.
P321	Specific treatment (see supplemental first aid instructions on this label).
P391	Collect spillage.
P501	Dispose of contents/container in accordance with local regulation.

2.3 Other hazards

Dust may form explosive mixture in air.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

Wettable powder (WP)
Bendiocarb 80 % w/w

Hazardous components

Name	CAS-No.	Conc. [%]

Bendiocarb	22781-23-3	80.00
Naphthalenesulfonic acid, butyl-, Me derivs, sodium salts	68909-83-1	> 1.00 – < 5.00
Naphthalene and alkyl naphthalene sulphonic acids formaldehyde condensate, sodium salt	68425-94-5	> 1.00 – < 5.00

Further information

Bendiocarb	22781-23-3	M-Factor: 10 (acute), 100 (chronic)

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

Inhalation Move to fresh air. Keep patient warm and at rest. 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 Rinse immediately with plenty of water, also under the eyelids, for at least 15 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. Rinse mouth. Induce vomiting only, if: 1. patient is fully conscious, 2. medical aid is not readily available, 3. a significant amount (more than a mouthful) has been ingested and 4. time since ingestion is less than 1 hour. (Vomit should not get into the respiratory tract.)

4.2 Most important symptoms and effects, both acute and delayed

Symptoms Local:, The product causes irritation of eyes, skin and mucous membranes.

Systemic:, Bradycardia, Sweating, Convulsions, Nausea, Lachrymation, Salivation, Vomiting, Diarrhoea, Miosis, Hypotension, Bronchial hypersecretion, Myoclonus, Respiratory paralysis, Somnolence, Coma, Respiratory failure, Hypothermia, Fibrillation, Spasm

4.3 Indication of any immediate medical attention and special treatment needed

Risks This product is a cholinesterase inhibitor carbamate.

Treatment	Systemic treatment: Initial treatment: symptomatic. In case of ingestion a gastric lavage within the first hour after ingestion and after intubation only with consecutive application of activated charcoal and sodium sulphate should be performed. In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens. Keep respiratory tract clear. Oxygen or artificial respiration if needed. The following antidotes are generally accepted: atropin and oximes. Recovery is spontaneous and without sequelae.

Contact the National Poisons and Hazardous Chemicals Information center in Dunedin, PO Box 913, Dunedin. Phone 0800 POISON (0800 764 766).

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable	High volume water jet
5.2 Special hazards arising from the substance or mixture	Dangerous gases are evolved in the event of a fire., In common with all other methyl carbamates, bendiocarb will liberate strongly lachrymatory and very toxic methyl isocyanate when heated above it's decomposition temperature which for bendiocarb is > 125 deg C. Methyl isocyanate has a very low flash point and will be readily consumed in a fire. Since methyl isocyanate readily decomposes in contact with water, all decompositions are best extinguished with water.

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	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 dust formation. Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment. Remove all sources of ignition.
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	Sweep up or vacuum up spillage and collect in suitable container for disposal. Collect and transfer the product into a properly labelled and tightly closed container. Clean floors and contaminated objects with plenty of water.

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	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.
Hygiene measures	When using, do not eat, drink or smoke. Remove soiled clothing immediately and clean thoroughly before using again. Contaminated work clothing should not be allowed out of the workplace. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Wash hands immediately after work, if necessary take a shower.

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. Keep away from direct sunlight. Protect from freezing. Store in a place accessible by authorized persons only. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Protect from freezing. Store in original container.
Advice on common storage	Keep away from food, drink and animal feedingstuffs.
Suitable materials	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
Bendiocarb	22781-23-3	0.2 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	Wear a compressed air respirator (continuous flow) conforming to European Norm EN14594 or EN14593-1 or equivalent or a particle

filter mask (protection factor 40) conforming to EN136P3 or equivalent.
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
Protective index	Class 6
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 5 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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	powder
Colour	beige
Odour	weak, characteristic
pH	4.5 - 7.5 at 1 % (23 °C) (deionized water)
Minimum ignition energy	< 3 mJ (23 °C)
Lower explosion limit	30 g/m3
Bulk density	ca. 0.25 g/ml (loose)
Water solubility	miscible
Partition coefficient: n-octanol/water	Bendiocarb: log Pow: 1.7 at 25 °C
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Thermal decomposition	from 150 °C, Heating rate: 3 K/min, Decomposition energy: 450 KJ/kg Exothermic decomposition. from 120 °C, Heating rate: 0.05 K/min Exothermic decomposition.
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) 50 mg/kg
Acute inhalation toxicity	LC50 (Rat) 0.313 mg/l Exposure time: 6 h Determined in the form of a respirable fine dust.
Acute dermal toxicity	LD50 (Rat) > 2,000 mg/kg
Skin irritation	No skin irritation (Rabbit)
Eye irritation	No eye irritation (Rabbit)
Sensitisation	Non-sensitizing. (Guinea pig) OECD Test Guideline 406, Magnusson & Kligman test

Assessment STOT Specific target organ toxicity – single exposure

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

Assessment STOT Specific target organ toxicity – repeated exposure

Bendiocarb caused reversible cholinesterase inhibition without long term effects in animal studies.

Assessment mutagenicity

Bendiocarb was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Bendiocarb was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Bendiocarb did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Bendiocarb 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 (Cyprinodon variegatus (sheepshead minnow)) 0.86 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient bendiocarb.
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 0.0377 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient bendiocarb.
Toxicity to aquatic plants	EC50 (Raphidocelis subcapitata (freshwater green alga)) 0.408 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient bendiocarb.

12.2 Persistence and degradability

Biodegradability	Bendiocarb: Not rapidly biodegradable
Koc	Bendiocarb: Koc: 33

12.3 Bioaccumulative potential

Bioaccumulation	Bendiocarb: Bioconcentration factor (BCF) 6.0 Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil	Bendiocarb: Mobile in soils

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment	Bendiocarb: 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 CONSIDERATIONS

13.1 Waste treatment methods

Product	Dispose of this product only by using according to the label, or at an approved landfill or other approved facility.

Contaminated packaging Triple rinse containers. Recycle if possible. If allowed under local authority, burn if circumstances, especially wind direction permit, otherwise crush and bury in an approved local authority facility. Do not use container for any other purpose.

SECTION 14: TRANSPORT INFORMATION

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.

ADR/RID/ADN

14.1 UN number	**2757**
14.2 Proper shipping name	CARBAMATE PESTICIDE, SOLID, TOXIC (BENDIOCARB MIXTURE)
14.3 Transport hazard class(es)	6.1
14.4 Packing group	II
14.5 Environm. Hazardous Mark	YES
Hazchem Code	2X

IMDG

14.1 UN number	**2757**
14.2 Proper shipping name	CARBAMATE PESTICIDE, SOLID, TOXIC (BENDIOCARB MIXTURE)
14.3 Transport hazard class(es)	6.1
14.4 Packing group	II
14.5 Marine pollutant	YES

IATA

14.1 UN number	**2757**
14.2 Proper shipping name	CARBAMATE PESTICIDE, SOLID, TOXIC (BENDIOCARB MIXTURE)
14.3 Transport hazard class(es)	6.1
14.4 Packing group	II
14.5 Environm. Hazardous Mark	NO

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

HSNO approval-Nr.	HSR000451
HSNO Controls	See www.epa.govt.nz
ACVM Condition	See www.foodsafety.govt.nz

Other product approvals	Approved Maintenance Compound Type B

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
Conc.	Concentration
ECx	Effective concentration to x %
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
EN	European Standard
EU	European Union
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx	Inhibition concentration to x %
IMDG	International Maritime Dangerous Goods
LCx	Lethal concentration to x %
LDx	Lethal dose to x %
LOEC/LOEL	Lowest observed effect concentration/level
MARPOL	MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S.	Not otherwise specified
NOEC/NOEL	No observed effect concentration/level
OECD	Organization for Economic Co-operation and Development
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe products in terms of their safety requirements. The above details do not imply any guarantee concerning composition, properties or performance of the product.

Reason for Revision: Section 2: Hazards Identification. Section 9: Physical and Chemical Properties.

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