






CHOICE Bifendoff 100 INSECTICIDE

Safety Data Sheet

SECTION 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Identifier	CHOICE Bifendoff 100 INSECTICIDE
Active Constituent	100 g/L BIFENTHRIN SOLVENT: 763 g/L HYDROCARBON LIQUID
Other means of Identification	GROUP 3A INSECTICIDE Grow Choice product code number: 2006 AVPMA registered number: 58149
Recommended use of the chemical and restrictions on due	For the control of Helicoverpa spp. in cotton, tomatoes, lucerne seed crops, navy beans; Carpophilus beetle in stone fruit (except cherries); certain species of mites in bananas, cotton and tomatoes; longtailed mealy bug in pears; banana weevil borer and banana rust thrips in bananas; mirids in cotton; whitefly in tomatoes; redlegged earth mite, blue oat mite, bryobia mite, webworm and brown pasture looper in faba beans, subterranean clover, clover, canola, wheat, barley, field peas, lupins and lucerne; vegetable weevil in canola; and certain species of wireworms in cotton and sugarcane; fig longicorn in grapes and citrus leaf eating weevil in citrus as per the Directions for Use.
Suppliers name, address and phone number:	Grow Choice Pty Ltd 113 Fitzroy Street TAMWORTH NSW 2340 Phone: 02 6766 3979 1800 817 676 Fax: 02 6766 2922 Email: admin@growchoice.com.au
Emergency phone number:	In Case Of Emergency Dial 000
Poisons Information Centre	Phone: 13 11 26 and speak to a Poisons Information Specialist. Fax: +61 2 9845 3597 http://www.chw.edu.au/poisons/contact.htm

SECTION 2: HAZARDS IDENTIFICATION (continued on page 2)

-  Classified as **HAZARDOUS** in accordance with the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004) 3rd Edition and the Globally Harmonized System of Classification and Labelling of Chemicals (the GHS).
-  Considered **non-dangerous** for road and rail transport by the Australian Code for the Transport of Dangerous Goods Road and Rail (August 2014 edition)
-  Considered **DANGEROUS** for transport by sea and air in accordance with the IMDG Code 37-14 (refer Section 14)

Classification of hazardous chemical

Carcinogenicity	Category 2
Acute toxicity	Category 3
Acute toxicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1
Skin sensitisation	Category 1B
Aspiration Hazard	Category 1
Hazardous to the aquatic environment (acute)	Category 1
Hazardous to the aquatic environment (chronic)	Category 1

2.2 Label Elements

Signal Word

DANGER

**GHS
Symbols**



Health Hazard

Skull and Cross bone

Environment

General
Precautionary
Statements.

**If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use**

Hazard Statements

**H304 May be fatal if swallowed and enters airways
H351 Suspected of causing cancer;
H331 Toxic if inhaled
H300 Fatal if swallowed
H372 Causes damage to the nervous system through prolonged or repeated exposure
H317 May cause an allergic skin reaction
H410 Very toxic to aquatic life with long-lasting effects**

Prevention

**P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust/fume/gas/mist/ vapours/spray.
P261 Avoid breathing dust/fume/gas/mist/ vapours/spray. Call POISON CENTRE.
P270 Do not eat, drink or smoke when using this product.

P270 Do not eat, drink or smoke when using this product

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves.

P281 Use personal protective equipment as required.
P273 Avoid release to the environment.**

Response

**P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331 DO NOT INDUCE VOMITING

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P304 + P340
P308 + P313 IF exposed or concerned: Get medical advice/attention.

P311 Call a POISON CENTER or doctor/physician.
P314 Get medical advice/attention if you feel unwell.

P330 Rinse mouth.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P363 Wash contaminated clothing before reuse.
Wash hands, arms, face, neck and any exposed skin thoroughly after handling.
P264
P391 Collect spillage.**

Storage

**P403+P235+P233 Store in a well-ventilated place. Keep cool. Keep container tightly closed.
P405 Store locked up**

Disposal

P501 Dispose of contents and container in accordance with local, regional and national regulations.

SECTION 3: COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical ingredients:	Component	CAS No	Concentration
	bifenthrin	82657-04-3	10%
CAS number and other unique identifiers:	Hydrocarbon liquid	64742-94-5	76%
Concentration of ingredients:	Other ingredients, including water	(non-hazardous)	balance

SECTION 4: FIRST AID MEASURES

In Case Of Emergency Dial 000 and/or Poisons Information Centre: Phone: 13 11 26 and speak to a Poisons Information Specialist. Take this SDS and or DFU/Label with you or when calling the Poisons Information Centre.

Description of necessary first aid measures

Swallow	If swallowed and if more than 15 minutes from a hospital DO NOT induce vomiting. Seek immediate medical advice,
Eye:	If product gets in eyes, wash it out immediately with water for at least 15 minutes. . Seek medical attention.
Skin:	Remove contaminated clothing and wash affected areas thoroughly with soap and water.
Inhaled	Move affected person to fresh air and keep at rest until recovered. Seek urgent medical attention.
Symptoms caused by exposure	
Dermal effects include symptoms such as rash, hives, blisters, sores and itchiness.	
Respiratory effects include symptoms such as: shortness of breath, asthma, respiratory distress, respiratory irritation, coughing, and difficulty in breathing, sinus problems, and chest pain.	
Ocular symptoms were redness, pain and swelling of eyes, itchy watery eyes and blurred vision.	
The chief effect from exposure is skin rash particularly on moist areas of the skin. May irritate the eyes.	

Medical Attention and Special Treatment

Treat Symptomatically.

Note that this product contains an aromatic hydrocarbon. Induction of vomiting may lead to inhalation of its vapors, which in turn may lead to lung damage. Therefore induction of vomiting must be performed under trained medical supervision. The active ingredient in this product (Bifenthrin) which is a pyrethroid insecticide.

SECTION 5: FIRE FIGHTING MEASURES

Suitable extinguishing media	Use carbon dioxide, foam, or dry chemical.
Specific hazards arising from the chemical	Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Containers may explode when heated. Runoff may pollute waterways.
Special protective equipment and precautions for fire fighters	Fire fighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1715/1716). Keep unnecessary people away. If it can be done safely, remove intact containers from the fire. Otherwise, use water spray to cool them. Bund area with sand or earth to prevent contamination of drains or waterways. Dispose of fire control water or other extinguishing agent and spillage safely later.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

In case of spillage it is important to take all steps necessary to:
Avoid contact with the spilled material or contaminated surfaces. Extinguish or remove any sources of ignition. When dealing with spills do not eat, drink or smoke and wear protective clothing and equipment. Keep people and animals away. Prevent spilled material from entering drains or watercourses.

Environmental precautions

Do not allow to get into surface water, drains and ground water. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up

Reposition any leaking containers so as to minimise leakage. Dam and absorb spill with an absorbent material (eg sand or soil). Shovel the absorbed spill into drums
Contain spill and absorb with earth, sand, clay, or other absorbent material. Collect and store in properly labelled, sealed drums for safe disposal. Deal with all spillages immediately.). Clean contaminated floors and objects thoroughly, observing environmental regulations If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.

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

Precautions for safe handling

Safe work practices are recommended.
Avoid contact with eyes and skin.
When opening the container and preparing spray wear appropriate PPE (refer Section 8).
Do not spray under high wind conditions.
Hygiene measures:
When using products, do not eat, drink or smoke.
Contaminated work clothing should not be allowed out of the workplace.
Wash hands thoroughly with soap and water after use and before eating, drinking, smoking/using tobacco, chewing gum, using the toilet or applying cosmetics.
After each day's use, wash gloves, face shield or goggles and contaminated clothing.
Avoid contact with eyes and skin.

Conditions for safe storage, including any incompatibilities

Keep out of reach of children, unauthorised persons and animals.
Store in tightly sealed original containers in a dry secure place away from fertilizers, feed and food.
Store out of direct sunlight and extreme temperature.
Always read the label and any attached leaflet before use.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION (continued on page 5)

Appropriate engineering controls

No special requirements. Product is used outdoors
Control process conditions to avoid contact. Use only in well-ventilated areas. If necessary, use local exhaust ventilation to keep airborne concentration below the exposure limits.

Personal protective equipment (PPE):

When opening the container, preparing the spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow length PVC chemical resistant and face shield or goggles.

When using the prepared spray, wear cotton overalls buttoned to the neck and wrist and a washable hat and optional once chemical is prepared for use, elbow length PVC chemical resistant and face shield or goggles if protected from spray drift/contamination.

Face and Eye Protection: Face shield or goggles.

Clothing: Cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat.

Gloves: Elbow-length chemical resistant PVC gloves.

Respiratory: If airborne concentrations are likely to exceed the exposure standards above or

if exposed to dust, an AS/NZS 1715/1716 approved respirator should be worn.

Recommended to use Australian and New Zealand Standard PPE:

Overalls	AS 3765, Clothing for protection against Hazardous chemicals
Gloves:	AS/NZS 2161, Industrial safety gloves and mittens (not electrical and medical gloves)
Goggles and face shield	AS/NZS 1337, Eye protectors for industrial applications.
Footwear	AS/NZS 2210, Occupational protective footwear
Respirators	AS NZS 1715 Selection, Use and Maintenance of Respiratory Protective Devices
Protective Devices	AS/NZS 1716, Respiratory Protective Devices

Requirements Concerning Training

Check State and/or Territory regulations that require people who use pesticides in their job or business to have adequate training in the application of the materials.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical Description

Bifenthrin is an off-white to pale tan waxy solid with a very faint slightly sweet odor. Used as a broad spectrum insecticide.

COLOUR	Light brown viscous oil
ODOUR	Very faint, slightly sweet odour
VAPOR PRESSURE	1.78X10 ⁻³ mPa at 20 deg C /1.335X10 ⁻⁸ mm Hg/
SOLUBILITY IN WATER	<0.1 ppb, 1.0 ug/L /<1.0X10 ⁻³ mg/L/ at 20 deg C
SOLUBLE IN.....	methylene chloride, chloroform, acetone, ether, toluene; slightly soluble in heptane, methanol
FLASH POINT	165 deg C (329 deg F) - closed cup
MELTING POINT	69 deg C
SPECIFIC GRAVITY:	0.89

SECTION 10: STABILITY AND REACTIVITY

Possibility of Hazardous Reactions: Special hazards arising from the substance or mixture: Carbon oxides, hydrogen chloride gas, hydrogen.

Chemical Stability: Stable under recommended storage conditions.

Conditions to Avoid: When heated to decomposition it emits toxic vapours of fluoride and /chloride/.

Incompatible Materials: Strong oxidizing agents. Not compatible with alkaline materials.

Hazardous Decomposition Products: This product is unlikely to spontaneously decompose.

HAZARDOUS POLYMERIZATION: This product is unlikely to spontaneously polymerise.

SECTION 11: TOXICOLOGICAL INFORMATION (continued on page 6)

TOXICITY:

Oral (Rats) LD50: 531mg/kg

Dermal (Rabbits) LD50: >2000mg/kg

Inhalation LC50: 4.9mg/L/4hr

HUMAN EXPOSURE AND TOXICITY: Neurological effects include symptoms such as dizziness, headache, tingling and numbness sensation, muscle spasms and tremors. Dermal effects include symptoms such as rash, hives, blisters, sores and itchiness. Respiratory effects include symptoms such as: shortness of breath, asthma, respiratory distress, respiratory irritation, coughing, and difficulty in breathing, sinus problems, and chest pain. Most of the gastrointestinal symptoms were nausea, vomiting and few cases presented with abdominal pain and diarrhea. Ocular symptoms were redness, pain and swelling of eyes, itchy watery eyes and blurred vision. Few cases presented with cardiovascular symptoms such as high blood pressure, irregular heartbeat, and heart attack. Exposure to bifenthrin, even at "acceptable" limits, can increase the risk for and frequency of inflammatory responses and diseases such as asthma.

ANIMAL STUDIES: Non-irritant to skin; virtually non-irritating to eyes (rabbits); no skin sensitization (guinea pigs). Bifenthrin Technical, 88.35% a.i., 98% cis, 2% trans; 200, 100, 50, 12 and 0 ppm /was given to rats in feed; 50/sex/dose for 2 years. No oncogenic effects reported. Effects included tremors, abrasions, alopecia, tail lacerations, reduced weight gain (females only), and reduced RBC 12% (males only). All effects were observed at 200 ppm. Technical (Bifenthrin), 89.7%, administered to 4 Beagles/sex/group at nominal concentrations of 0, 0.75, 1.50, 3.0, and 5.0 mg/kg/day in gelatin capsules for 52 weeks; Intermittent delayed onset of tremors occurring through week 29 at 3.0 and 5.0 mg/kg/day. Bifenthrin technical, 88.35% a.i., 98% cis, 2% trans; 100, 60, 30 and 0 ppm was given to rats in the feed for 8 weeks prior to F0 mating through F2b weaning; 25/sex/dose; no fertility or reproductive effects, other effects include tremors during lactation, ovary weight reduction in adults. Non-teratogenic in rats (> or = 2 mg/kg/day) & rabbits (8 mg/kg/day). Tremors were observed in 6 pups out of 40 examined (4 males on post-natal day (PND) 10 and 2 females on PND 28) at the highest dose (9 mg/kg/day). Bifenthrin was not mutagenic in the Ames assay, and did not produce chromosome aberrations in Chinese hamster ovary (CHO) cells.

ECOTOXICITY STUDIES: Based on available data, bifenthrin has been classified as slightly toxic on an acute basis to birds. Bifenthrin showed no adverse effects to reproduction at the highest concentration tested for birds. Mammalian toxicity data suggest that this compound is moderately toxic to small mammals on an acute basis. Relative to steelhead, rainbow trout have different responses to bifenthrin acute toxicity as well as different rates of hepatic bifenthrin biotransformation. Bifenthrin is highly toxic on an acute and chronic basis to freshwater fish and aquatic-phase amphibians, and very highly toxic to freshwater aquatic invertebrates. Bifenthrin has also been classified as very highly toxic to estuarine/marine fish and invertebrates on an acute basis.

Acute Health Effects

The Australian Acceptable Daily Intake (ADI) for bifenthrin for a human is 0.01 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 1 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species. (Ref: Comm. Dept. of Health and Ageing Office of Chemical Safety, 'ADI List', June 2014).

SECTION 12: ECOLOGICAL INFORMATION (continued on page 7)

ECOTOXICITY: ENVIRONMENTAL DATA: Do not contaminate streams, rivers or waterways with this product or the used containers.

ECOTOXICOLOGY: Active Ingredient – Bifenthrin AQUATIC TOXICITY:

The active ingredient is very toxic to aquatic organisms.

96 hr LC50 (Rainbow trout): 0.00015mg/L

96 hr LC50 (Bluegill sunfish): 0.00035mg/L

96hr LC50 (Daphnia magna): 0.0016mg/L

TERRESTRIAL TOXICITY:

Bifenthrin is moderately toxic to many species of birds.

8 Day Oral LC50 (Mallard ducks): 1,280ppm

8 Day Oral LC50 (Bobwhite Quail): 4,450ppm

Acute Oral LD50 (Mallard ducks): 2,150mg/kg

Acute Oral LD50 (Bobwhite Quail): 1,800mg/kg

Persistence and Degradability:

Bio accumulative Potential: There is a concern about possible bio accumulation of the active ingredient (Bifenthrin) in birds.

Mobility in Soil: Bifenthrin is not mobile in soil and has a high affinity for organic matter. If released to soil, bifenthrin is expected to have no mobility based upon a Koc of range of 8,387 to 14,332. Bifenthrin, present at a concentration of

4.5 mg/kg and incubated for 24 months exhibited half-lives of 1332 to 1410 days, indicating that biodegradation is not an important environmental fate process in soil.

Other adverse effects

Highly toxic, may be fatal if inhaled, swallowed or absorbed through skin. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal of product

On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals (ChemClear®).

Disposal of Container

Do not use this container for any other purpose. Triple rinse containers; add rinsate to the spray tank, then offer the container for recycling/reconditioning, or puncture top, sides and bottom and dispose of in landfill in accordance with local regulations. drumMUSTER is the national program for the collection and recycling of empty, cleaned, non-returnable crop production and on-farm animal health chemical containers. If the label on your container carries the drumMUSTER symbol, triple rinse the container, ring your local Council, and offer the container for collection in the program. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, puncture or shred and bury containers in local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

SECTION 14: TRANSPORT INFORMATION

General Transport Information Land

It is considered good practice not to transport agricultural chemical products with food, food related materials and animal feed products.

Considered **non-dangerous** for road and rail transport by the Australian Code for the Transport of Dangerous Goods Road and Rail (August 2014 edition)

Sea and Air

Considered **DANGEROUS** for transport by sea and air in accordance with the IMDG Code 37-14

UN-No: 3082

SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS LIQUID, N.O.S (CONTAINS BIFENTHRIN)

Class: 9 Miscellaneous Dangerous Goods

Packing group: III Marine Pollutant Hazchem code: 2Z

SECTION 15: REGULATORY INFORMATION

POISON SCHEDULE: S6 | Signal word: POISON

SECTION 16: ANY OTHER RELEVANT INFORMATION

Review

This Safety Data Sheet (SDS) was completed 28 January 2017 and replaces MSDS dated 03/09/10.

Acronyms:

AVPMA: Australian Pesticides and Veterinary Medicines Authority.

GHS: Globally Harmonised System of Classification and Labelling of chemicals

HSIS: Hazardous Substances Information System

NOHSC: National Occupational Health and Safety Commission

CAS No.: unique numerical identifier assigned by Chemical Abstracts Service (division of the American Chemical Society)

STEL: Exposure standard - short term exposure limit.

AS/NZS: Australian Standards and New Zealand Standards for Personal protective equipment

ADI: Acceptable Daily Intakes For Agricultural And Veterinary Chemicals

ADG: Australian Dangerous Goods

IMDG: International Maritime Code of Dangerous Goods

IATA: International Air Transport Association

End of SDS

DISCLAIMER:

This SAFETY DATA SHEET has been developed according to the Work Health and Safety Regulations (WHS Regulations) Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals December 2011. The data, information and recommendations herein ("information") are represented in good faith and believed to be correct as of the date hereof. The purpose of this SAFETY DATA SHEET is to describe product in terms of their safety requirements. Grow Choice Pty Ltd makes no representation of merchantability, fitness for a particular purpose of application, or of any other nature with respect to the information or the product to which the information refers ("the product"). The information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purpose prior to the use of the product. The physical data shown herein are typical values based on the material tested. These values should not be construed as a guaranteed analysis of any specific lot or as guaranteed specification for the product or specific lots thereof.

Due care should be taken to make sure that the use or disposal of this product and/or its packaging is in compliance with Relevant Federal, State and Local

PRODUCT: CHOICE Bifendoff 100 INSECTICIDE