Section 1 - Identification of The Material and Supplier

<table>
<thead>
<tr>
<th>Turf Culture Pty Ltd</th>
<th>Phone: 03 9553 3121</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 9, 57-59 Horne St</td>
<td>Fax: 03 8888 9991</td>
</tr>
<tr>
<td>Sunbury, Vic 3429 Australia</td>
<td><a href="http://www.turfculture.com.au">www.turfculture.com.au</a></td>
</tr>
</tbody>
</table>

Chemical nature: Bifenthrin is a pyrethroid insecticide.

Trade Name: Ceasefire 80 SC Insecticide

APVMA Approval No: 64813

Product Use: Agricultural insecticide for use as described on the product label.

Creation Date: May, 2010

This version issued: March, 2019 and is valid for 5 years from this date.

Poisons Information Centre: Phone 13 11 26 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Xn, Harmful. N, Dangerous to the environment. Hazardous according to the criteria of SWA.

Not subject to the ADG Code when transported in Australia by Road or Rail in packages 500kg(L) or less; or IBCs (refer to SP AU01). However if transported by Air or Sea, this provision does not apply. Then the product is classed as Dangerous (Class 9 Environmentally Hazardous) by IATA and IMSBC respectively. See details below and in Section 14 of this SDS.

SUSMP Classification: S6

ADG Classification: Class 9: Miscellaneous dangerous goods.

UN Number: 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains 8% Bifenthrin).

GHS Signal word: WARNING.

Acute Toxicity Oral Category 4
Skin Sensitisation Category 1
Acute Toxicity Inhalation Category 4
Carcinogenicity Category 2
Specific Target Organ toxicity - repeated exposure Category 2
Hazardous to aquatic environment Short term/Chronic Category 1

HAZARD STATEMENT:

H302: Harmful if swallowed.
H317: May cause an allergic skin reaction.
H332: Harmful if inhaled.
H351: Suspected of causing cancer.
H373: May cause damage to organs (nervous system) through prolonged or repeated exposure.
H410: Very toxic to aquatic life with long lasting effects.

PREVENTION

P102: Keep out of reach of children.
P262: Do not get in eyes, on skin, or on clothing.
P264: Wash contacted areas thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P281: Use personal protective equipment as required.

RESPONSE

P337: If eye irritation persists: seek medical attention.
P353: Rinse skin or shower with water.
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P333+P313: If skin irritation or rash occurs: Get medical advice.

SAFETY DATA SHEET

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Poisons Information Centre: 13 11 26 from anywhere in Australia
P370+P378: Not combustible. Use extinguishing media suited to burning materials.

**STORAGE**
- P410: Protect from sunlight.
- P403+P235: Store in a well-ventilated place. Keep cool.

**DISPOSAL**
- P501: Dispose of contents and containers as specified on the registered label.

### Physical Description & Colour
Beige to white suspension.

### Odour
Mild musty odour.

### Major Health Hazards:
Bifenthrin is harmful to mammals when ingested. Large doses may cause incoordination, tremor, salivation, vomiting, diarrhoea, and irritability to sound and touch. LD₅₀ for Bifenthrin is about 54 mg/kg in female rats and 70 mg/kg in male rats. The LD₅₀ for rabbits whose skin is exposed to Bifenthrin is greater than 2,000 mg/kg. Bifenthrin does not sensitize the skin of guinea pigs. Although it does not cause inflammation or irritation on human skin, it can cause a tingling sensation which lasts about 12 hours. It is virtually non-irritating to rabbit eyes. This product is harmful if swallowed. May cause an allergic skin reaction. Harmful if inhaled. Suspected of causing cancer. May cause damage to organs (nervous system) through prolonged or repeated exposure.

### Section 3 - Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS No</th>
<th>Conc,%</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifenthrin</td>
<td>82657-04-3</td>
<td>80g/L</td>
<td>not set</td>
<td>not set</td>
</tr>
<tr>
<td>Other non hazardous ingredients</td>
<td>secret to 100</td>
<td></td>
<td>not set</td>
<td>not set</td>
</tr>
</tbody>
</table>

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

### Section 4 - First Aid Measures

**General Information:**
You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 0800 764 766 in New Zealand and is available at all times. Have this SDS with you when you call.

**Inhalation:** First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

**Skin Contact:** Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed.

**Eye Contact:** First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. Take special care if exposed person is wearing contact lenses.

**Ingestion:** If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

### Section 5 - Fire Fighting Measures

**Fire and Explosion Hazards:** There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

Only small quantities of decomposition products are expected from this product at temperatures normally achieved in a fire. This will only occur after heating to dryness.

Fire decomposition products from this product are likely to be irritant if inhaled.

**Extinguishing Media:** Not Combustible. Use extinguishing media suited to burning materials.

**Fire Fighting:** If a significant quantity of this product is involved in a fire, call the fire brigade.

**Flash point:** Does not burn.

**Upper Flammability Limit:** Does not burn.

**Lower Flammability Limit:** Does not burn.

**Autoignition temperature:** Not applicable - does not burn.

**Flammability Class:** Does not burn.
**Volatiles:**

**Freezing/Melting Point:**

Below 0°C.

**Boiling Point:**

Approximately 100°C at 100kPa.

**Odour:**

Mild musty odour.

**Physical Description & colour:**

Beige to white suspension.

**Physical and Chemical Properties:**

**Physical Description & colour:**

Beige to white suspension.

**Odour:**

Mild musty odour.

**Boiling Point:**

Approximately 100°C at 100kPa.

**Freezing/Melting Point:**

Below 0°C.

**Volutiles:**

Water component.
Bifenthrin Ingredient

7 days. After 7 days, the remaining Bifenthrin was found accumulated in tissues with high fat content such as the skin and promptly excreted. Rats treated with 4 to 5 mg/kg, excreted 70% in the urine and 20% in the faeces within modes of breakdown within animal systems as other pyrethroid insecticides. In mammals, Bifenthrin is rapidly br

Organ Toxicity:

Also, females had higher incidences of lung cancer than the controls at higher, dose related trend of increased tumour incidence in the male urinary bladder. The incidence was significantly increased at 86 mg/kg/day. Also, females had higher incidences of lung cancer than the controls at doses of 7 mg/kg and higher. The EPA has classified Bifenthrin as a class C carcinogen, a possible human carcinogen.

Carcinogenic Effects:

There was no evidence of cancer in a 2-year study of rats who ate as much as 10 mg/kg/day of Bifenthrin. However, an 87 week feeding study of mice with doses of 7, 29, 71, and 86 mg/kg showed a significantly higher, dose related trend of increased tumour incidence in the male urinary bladder. The incidence was significantly increased at 86 mg/kg/day. Also, females had higher incidences of lung cancer than the controls at doses of 7 mg/kg and higher. The EPA has classified Bifenthrin as a class C carcinogen, a possible human carcinogen.

Organ Toxicity: Pyrethroids are poisons that affect the electrical impulses in nerves, over-stimulating nerve cells causing tremors and eventually causing paralysis.

Fate in Humans and Animals: Bifenthrin is absorbed through intact skin when applied topically. It undergoes similar modes of breakdown within animal systems as other pyrethroid insecticides. In mammals, Bifenthrin is rapidly broken down and promptly excreted. Rats treated with 4 to 5 mg/kg, excreted 70% in the urine and 20% in the faeces within 7 days. After 7 days, the remaining Bifenthrin was found accumulated in tissues with high fat content such as the skin and fat in males and females and the ovaries of females. Bifenthrin is less toxic to warm-blooded animals, such as mammals, than to cold-blooded animals.

There is no data to hand indicating any particular target organs.

Classification of Hazardous Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Risk Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifenthrin</td>
<td>&gt;=3%Conc&lt;25%: Xn; R22</td>
</tr>
<tr>
<td></td>
<td>Carcinogenicity – category 2</td>
</tr>
<tr>
<td></td>
<td>Acute toxicity (inhal) – category 3</td>
</tr>
</tbody>
</table>

SAFETY DATA SHEET

Issued by: Turf Culture Pty Ltd
Phone: 03 9553 3121

Poisons Information Centre: 13 11 26 from anywhere in Australia
• Acute toxicity (oral) – category 2
• Specific target organ toxicity (nervous system, repeated exposure) – category 1
• Skin sensitisation – category 1B
• Hazardous to the aquatic environment (acute) – category 1
• Hazardous to the aquatic environment (chronic) – category 1

### Potential Health Effects

**Inhalation:**
**Short Term Exposure:** Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.
**Long Term Exposure:** No data for health effects associated with long term inhalation.

**Skin Contact:**
**Short Term Exposure:** This product causes skin numbness but further symptoms are not available. However product is unlikely to cause any discomfort in normal use.
**Long Term Exposure:** No data for health effects associated with long term skin exposure.

**Eye Contact:**
**Short Term Exposure**:
• This product is believed to be not irritating to eyes.
**Long Term Exposure:**
• No data for health effects associated with long term eye exposure.

**Ingestion:**
**Short Term Exposure**:
• Significant oral exposure is considered to be unlikely. Available data shows that this product is harmful, but symptoms are not available. This product is unlikely to cause any irritation problems in the short or long term.
**Long Term Exposure**:
• No data for health effects associated with long term ingestion.

**Carcinogen Status:**

- SWA: Bifenthrin is classified as a Category 2 carcinogen by SWA.
- NTP: No significant ingredient is classified as carcinogenic by NTP.
- IARC: No significant ingredient is classified as carcinogenic by IARC.

### Section 12 - Ecological Information

**Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.**

**Effects on Birds:** Bifenthrin is moderately toxic to many species of birds. The dietary concentration (8 day) at which half of the test animals die, the LC$_{50}$, is 1,280 ppm for mallard ducks and 4,450 ppm for bobwhite quail. The acute oral LD$_{50}$ is 1,800 mg/kg for bobwhite quail and 2,150 mg/kg for mallard ducks. There is concern about possible bioaccumulation in birds.

**Effects on Aquatic Organisms:** Bifenthrin is very highly toxic to fish, crustaceans and aquatic animals. The LC$_{50}$ after a 96-hour exposure is 0.00015 mg/l for rainbow trout, 0.00035 mg/l for bluegill, and 0.0016 mg/l for Daphnia. Because of its low water solubility and high affinity for soil, Bifenthrin is not likely to be found in aquatic systems.

**Effects on Other Animals (Nontarget species):** Bifenthrin is toxic to bees.

### ENVIRONMENTAL FATE

**Breakdown of Chemical in Soil & Groundwater:** Bifenthrin does not move in soils with large amounts of organic matter, clay and silt. It also has a low mobility in sandy soils that are low in organic matter. Bifenthrin is relatively insoluble in water, so there are no concerns about groundwater contamination through leaching. It's half-life in soil, the amount of time it takes to degrade to half of its original concentration, is 7 days to 8 months depending on the soil type and the amount of air in the soil.

**Breakdown of Chemical in Vegetation:** Bifenthrin is not absorbed by plant foliage, nor does it translocate in the plant.

### Section 13 - Disposal Considerations

**Disposal:** Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 http://www.chemclear.com.au/ and for help with the disposal of empty drums, contact DrumMuster http://www.drummuster.com.au/ where you will find contact details for your area.
Section 14 - Transport Information

Not subject to the ADG Code when transported by Road or Rail in Australia, in packages 500kg(L) or less; or IBCs, but classed as Dangerous by IATA and IMDG/IMSBC when carried by Air or Sea transport (see details below).

UN Number: 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazchem Code: •3Z
Special Provisions: 179, 274, 331, 335, AU01
Limited quantities: ADG 7 specifies a Limited Quantity value of 5 L for this class of product.
Dangerous Goods Class: Class 9: Miscellaneous Dangerous Goods.
Packing Group: III
Packing Instruction: P001, IBC03, LP01

Class 9 Miscellaneous Dangerous Goods shall not be loaded in the same vehicle or packed in the same freight container with Dangerous Goods of Class 1 (Explosives).

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.
The following ingredient: Bifenthrin, is mentioned in the SUSMP.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Acronyms:
ADG Code Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)
AICS Australian Inventory of Chemical Substances
SWA Safe Work Australia, formerly ASCC and NOHSC
CAS number Chemical Abstracts Service Registry Number
Hazchem Code Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC International Agency for Research on Cancer
NOS Not otherwise specified
NTP National Toxicology Program (USA)
R-Phrase Risk Phrase
SUSMP Standard for the Uniform Scheduling of Medicines & Poisons
UN Number United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS.

OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document “Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice” (Feb 2016)