

## SAFETY DATA SHEET



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Date of Issue: August 2016  
SDS No. FMC/ BRIG/2

### SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name: BRIGADE<sup>®</sup> GRANULAR INSECTICIDE**

**Other Names:** Brigade. Bifenthrin.  
**Use:** A granular Insecticide for control of certain pests in turf; ants, fleas and ticks in external surrounds of buildings and structures.  
**Company:** FMC Australasia Pty Ltd.  
**Address:** 12 Julius Avenue, North Ryde, NSW 1670  
**Telephone Number:** 02 9887 0900 **Fax Number:** 02 9887 0911  
**Emergency Telephone Number:** 1800 033 111 (All hours - Australia wide).

### SECTION 2 HAZARDS IDENTIFICATION

**Classified as hazardous according to criteria of Safe Work Australia.  
Not classified as a Dangerous Good according to the ADG Code.**

Under the Globally Harmonised System (GHS) this product is a hazardous substance with the following environmental classification:

**Globally Harmonised System (GHS) Classification:**

Hazardous to the Aquatic Environment – Acute Hazard: Category 1.  
Hazardous to the Aquatic Environment – Long term hazard: Category 4.

**Signal Word:** WARNING.

**Hazard Statements:**

H400 Very toxic to aquatic life.  
H413 May cause long lasting harmful effects to aquatic life.

**Precautionary statements:**

*Prevention:*

P273 Avoid release to the environment.

*Response:*

P391 Collect spillage.

*Disposal:*

P501 Dispose of contents/container in accordance with national regulations.

**Pictogram:**



**SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS****Ingredients:**

<b>CHEMICAL</b>	<b>CAS NUMBER</b>	<b>PROPORTION</b>
Bifenthrin	82657-04-3	0.2% w/w
Quartz [Silica crystalline]	14808-60-7	> 90% w/w
Other ingredient determined to be non-hazardous		balance

**SECTION 4 FIRST AID MEASURES****FIRST AID**

**Swallowed:** If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131126.

**Eye:** Granules may scratch eye surfaces and/or cause mechanical irritation. Flush with water until granules and chemical are removed. If irritation persists, obtain medical attention.

**Skin:** If on skin or clothing, shake off and then wash skin with soap and water.

**Inhaled:** Remove patient to fresh air. If breathing discomfort occurs, obtain medical attention.

**Advice to Doctors:** Bifenthrin, the active ingredient in this product is a pyrethroid insecticide. Bifenthrin is toxic by ingestion and highly toxic by inhalation. Gastric lavage with an endotracheal tube may be preferred to vomiting. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive. However, due to the very low concentration of bifenthrin in this product, symptoms are unlikely to be caused by this product.

**SECTION 5 FIRE FIGHTING MEASURES**

**Specific Hazard:** Product may support combustion at elevated temperatures.

**Extinguishing media:** Foam, CO<sub>2</sub> or dry chemical. Soft stream water fog if no alternatives. Contain all runoff.

**Hazards from combustion products:** On burning will emit toxic fumes of carbon monoxide, carbon dioxide, hydrogen chloride, chlorine, fluorine and hydrogen fluoride etc.

**Precautions for fire-fighters and special protective equipment:** Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe or contact smoke, gases or vapours generated.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

**Emergency procedures:** Isolate and post spill area. Keep out unprotected persons and animals. Wear prescribed protective clothing and equipment. Large spills should be dyked and covered to prevent dispersal. Keep material out of streams and sewers. Vacuum, shovel or pump spilled material into an approved container and if unable to use as directed on the label, dispose of as listed in section 13. For good industrial hygiene, wash hands and arms with soap and water after handling granules.

**Material and methods for containment and cleanup procedures:** Not applicable to this product. DO NOT allow product to enter sewers, drains, dams, creeks or any other waterways.

**SECTION 7 HANDLING AND STORAGE**

**Precautions for Safe Handling:** Generally no special precautions are required. Wash hands after use.

**Conditions for Safe Storage:** Store in closed original packaging, in a cool, well ventilated area away from children, animals, food and feedstuffs. Do not store for prolonged periods in direct sunlight. Do NOT allow product to enter sewers, drains, creeks or any other waterways. Keep away from domestic pets, especially dogs. If dogs eat the granules, contact your veterinary surgeon immediately.

**SECTION 8 | EXPOSURE CONTROLS / PERSONAL PROTECTION****National Exposure Standards:**

Safe Work Australia have not established an exposure standard for bifenthrin. The following standard may apply to the product:

Atmospheric Contaminant	Exposure Standard (TWA) <sup>a</sup>	STEL <sup>b</sup>
Silica Crystalline (quartz)	0.1 mg/m <sup>3</sup>	-
a = TWA - Time-weight Average		b = STEL - Short Term Exposure Standard

**Biological Limit Values:**

No biological limit allocated.

**Engineering controls:**

Use in well ventilated areas. Keep containers close when not in use.

**Personal Protective Equipment (PPE):**

General: No special protective clothing is required. As a good work practice, wear clothing that minimises skin contact with this sheeting.

Personal Hygiene: Wash hands and arms before eating, drinking or smoking.

**SECTION 9 | PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Tan, solid granules.
<b>Odour:</b>	Slightly musty odour.
<b>Boiling point:</b>	Not available.
<b>Freezing point:</b>	Not available.
<b>Bilk Density:</b>	1.39 g/mL.
<b>Solubility in Water:</b>	Not soluble.
<b>Flammability:</b>	May support combustion at elevated temperatures.
<b>Corrosive hazard:</b>	Non corrosive; compatible with stainless steel, glass & aluminium.
<b>Flashpoint (°C):</b>	Not applicable - granule.
<b>Flammability Limits (%):</b>	Not established.
<b>Poisons Schedule:</b>	Product is a not a scheduled poison.

**SECTION 10 | STABILITY AND REACTIVITY**

**Chemical Stability:** Product is considered stable in ambient conditions for a period of at least 2 years after manufacture.

**Conditions to avoid:** Keep out of the sun.

**Incompatible materials:** No particular materials to avoid

**Hazardous decomposition products:** When the product is heated to high temperatures, the active constituent will decompose and emit toxic fumes.

**Hazardous reactions:** No particular reactions to avoid.

**SECTION 11 | TOXICOLOGICAL INFORMATION*****Potential Health Effects:***

This product is expected to have low toxicity, and if swallowed the mechanical effects are expected to be of greater concern. Bifenthrin, the active ingredient in this product is present at 0.1%. Ingestion of large doses of bifenthrin by laboratory animals produced signs of toxicity which included clonic convulsions, tremors and bloody nasal discharge. But it is not likely to be physically possible to consume large quantities of bifenthrin by ingesting the plastic sheet.

**Acute**

**Swallowed:** This product has low oral toxicity. Acute Oral LD<sub>50</sub> (rat) > 5000 mg/kg.

**Eye:** Non-irritating to the eye. Excessive exposure to granules may cause irritation to the eyes. This product contains a granular material (sand) that may cause mechanical irritation to the eyes.

**SECTION 11 TOXICOLOGICAL INFORMATION (Continued)**

**Skin:** This product has very low dermal toxicity.

**Inhaled:** Unlikely to cause inhalation toxicity unless the product is at elevated temperatures or is burned. Vapours and gases released under thermal decomposition may be toxic.

**Chronic:** No data available on this formulation. In studies with laboratory animals, Bifenthrin Technical did not cause teratogenicity or reproductive toxicity. Tremors were associated with repeated exposure of dogs, rats, rabbits and mice to Bifenthrin. The overall results from a battery of genotoxicity studies indicate that Bifenthrin is not considered to be genotoxic. Ames test results were negative.

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*Crystalline silica* - also known as silicon dioxide (SiO<sub>2</sub>) - is the basic component of sand, quartz and granite rock and is found in varying proportions in aggregates, sand, mortar, concrete and stone, and is also in the air and the soil. Processes which may give rise to airborne concentrations of crystalline silica dust include hard rock mining, excavation, tunnelling and earthworks, construction, foundry operations, ceramics production, stone works, refractory brick production, abrasive blasting, agricultural ploughing and harvesting, and the production of asphalt, agricultural chemicals, abrasives, glass and paint. If the dust given off from working with these materials is fine enough to be breathed into the lungs, it is termed "respirable". Certain exposures to crystalline silica can cause serious harm to human health. Prolonged exposure to respirable crystalline silica can cause silicosis.

Safe Work Australia have classified crystalline silica as a hazardous substance, but have not provided a classification and have not allocated Risk phrases for this substance.

**SECTION 12 ECOLOGICAL INFORMATION**

**Environmental Toxicology:** The active ingredient, Bifenthrin, is highly toxic to fish and aquatic arthropods with LC<sub>50</sub> values ranging from 0.0038 µg/L to 17.8 µg/L. In general, the aquatic arthropods are the most sensitive species. Care should be taken to avoid contamination of the aquatic environment. Bifenthrin had no effect on molluscs at its limit of water solubility. Bifenthrin is only slightly toxic to both waterfowl and upland game birds with LC<sub>50</sub> values range from 1800 mg/kg to > 2,150 mg/kg. Do not contaminate sewers, drains, dams, creeks or any other waterways with product or the used container. Use with caution around pets - ensure product is well dispersed ie. swept in between pavers, cracks, and crevices and dispersed into soil and/or lawn. Cover or remove fishponds, aquariums etc before application. DO NOT apply Brigade within 2 metres of a fishpond or water containing fish or aquatic species.

**Environmental Properties:** No data is available on Brigade Granular Insecticide. The active ingredient, bifenthrin (0.2%), degrades at a moderate rate in soils (t<sub>1/2</sub> = 50 to 205 days), and more rapidly on the surface of bare soils (t<sub>1/2</sub> = 7 to 62 days). Bifenthrin is tightly bound in most soils and has an extremely low water solubility. Bifenthrin is highly toxic to aquatic organisms. Do NOT allow product to enter sewers, drains, dams, creeks or any other waterways.

**SECTION 13 DISPOSAL CONSIDERATIONS**

**Spills & Disposal:** Keep material out of streams and sewers. Dispose of drummed wastes, including decontamination solution, in accordance with the requirements of Local or State Waste Management Authorities via an approved industrial waste disposal site.

*Dangerous to Fish:* Do NOT allow spilled product or wash solution to enter sewers, drains, dams, creeks or any other waterways.

**SECTION 14 TRANSPORT INFORMATION**

**Road & Rail Transport:** Brigade Granular Insecticide is exempt from classification as a Dangerous Good in packs less than 3,000 kg or litres under the Australian Code for the Transport of Dangerous Goods by Road and Rail. For bulk shipments this product is a class 9, UN 3077. (See special provision AU01).

**SECTION 14 TRANSPORT INFORMATION**

**Marine and Air Transport:** Brigade Granular Insecticide is a Marine Pollutant according to International Maritime Dangerous Goods (IMDG) Code and the International Air Transport Association (IATA). If transporting by sea or air the following Dangerous Goods Classification applies: UN 3077, Class 9 (Miscellaneous Dangerous Goods), Packing Group III, Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Contains 0.2% bifenthrin).

**SECTION 15 REGULATORY INFORMATION**

Classified as a hazardous substance according to criteria of Safe Work Australia, but no classification or risk phrases have been established.

Under the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP No. 1), this product is a not a scheduled poison.

This product is registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 52791.

Product is not classified as a Dangerous Good according to the ADG Code (7<sup>th</sup> Ed).

Product is classified as a Dangerous Good according to International Maritime Dangerous Goods (IMDG) Code and the International Air Transport Association (IATA).

**SECTION 16 OTHER INFORMATION**

Issue Date: 1 August 2016. Valid for 5 years.

Key to abbreviations and acronyms used in this SDS:

ADG Code: Australian Dangerous Goods Code (for the transport of dangerous goods by Road and Rail).

Carcinogen: An agent which is responsible for the formation of a cancer.

Clonic: Alternate involuntary muscular contraction and relaxation in rapid succession.

Genotoxic: Capable of causing damage to genetic material, such as DNA.

Lavage: The irrigation or washing out of an organ, as of the stomach or bowel.

Mutagen: An agent capable of producing a mutation.

Oedema: Accumulation of fluid in tissues.

Teratogen: An agent capable of causing abnormalities in a developing foetus.

Safe Work Australia: Formally known as Australian Safety & Compensation Council (ASCC) which was formally known as the National Occupational Health & Safety Commission (NOHSC).

**References**

1. "Search Hazardous Substances". Safe Work Australia website. (2015).
2. "Approved Criteria for Classifying Hazardous Substances" 3rd Ed. NOHSC Australia. [NOHSC:1008 (2004)]. October 2004.
3. Globally Harmonized System of Classification and Labelling of Chemicals (GHS). United Nations, 2009.

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 should read this SDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

*End SDS*