

MATERIAL SAFETY DATA SHEET

1. Chemical Product and Company Information

Product Name : Emamectin Benzoate 5% SG

Chemical Name : Epimethylamino-4"-deoxyavermectin benzoate (b1_a& b1_b)
Chemical Formula : C₅₆H₈₁NO₁₅ (emamectin B_{1a}) + C₅₅H₇₉NO₁₅ (emamectin B_{1b})
Mol. Wt. : 1008.3 (emamectin B_{1a}) + 994.2 (emamectin B_{1b})
Chemical Family :
Use : Insecticide
Company : Global Agrichemical (PTY) LTD
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2. Composition / Information on Ingredients

Chemical Name	CAS No	Concentration [%]
Emamectin Benzoate	155569-91-8	5
Inert Ingredients	-----	Q.S.

3. Hazards Identification

Symptoms of Acute Exposure

Causes severe eye irritation. Injury may be permanent. Irritating to skin. Inhalation can cause irritation to the respiratory tract and can result in chemical pneumonitis if aspirated. Ingestion results in central nervous system effects such as muscle tremors, decreased activity, ataxia (unsteadiness or in coordination), and dilated pupils (mydriasis). Vapors may cause drowsiness and dizziness.

Hazardous Decomposition Products

May decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: White to Tan colour granules
Odor: Odourless to slight amine like odour

Unusual Fire, Explosion and Reactivity Hazards

Non-flammable solid. Can release vapors at temperatures at or above the flash point. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition.

4. First Aid Measures

If swallowed: Do not give any liquid to the person. Do not induce vomiting unless told to do so. Do not give anything by mouth to an unconscious person.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 Minutes.

If inhaled: Move person to fresh air. If person is not breathing, call an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.

NOTE TO PHYSICIAN:

This material is believed to enhance GABA activity in animals. It is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic Emamectin benzoate exposure.

Toxicity can be minimized by early administration of chemical absorbents (eg activated charcoal). If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parenteral fluid replacement therapy should be given, along with other required supportive measures as indicated by clinical signs, symptoms and measurements.

5. Fire Fighting Measures

Unusual Fire, Explosion and Reactivity Hazards: During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire: Use dry chemical, foam or CO₂ extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. Accidental Release Measures

Avoid dust formation.

Environmental precautions

Do not flush into surface water or sanitary sewer system.

Methods for cleaning up

Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13). Do not create a powder cloud by using a brush or compressed air. Clean contaminated surface thoroughly.

Additional advice

If the product contaminates rivers and lakes or drains inform respective authorities

7. Handling and Storage

STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

HANDLING

No special protective measures against fire required. Avoid contact with skin and eyes. When using, do not eat, drink or smoke.

8. Exposure Controls/Personal Protection

ENGINEERING MEASURES

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated. The extent of these protection measures depends on the actual risks in use. If airborne dust is generated, use local exhaust ventilation controls. Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit. Where necessary, seek additional occupational hygiene advice.

PERSONAL MEASURES

INGESTION: Do not eat, drink, smoke or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.

EYES: To avoid eye contact, wear chemical goggles or a full-face shield.

SKIN: To avoid skin contact, wear full-length disposable protective clothing, waterproof boots, nitrile gloves, and a head covering.

INHALATION: To avoid breathing vapour or mist, wear an approved supplied air respirator or self-contained breathing apparatus.

9. Physical and Chemical Properties

Form:	Granules
Colour:	White to Tan
pH:	8 at 4-1 % w/v
Flammability (solid, gas):	Not flammable
Tap Density:	N.A.
Oxidizing properties:	Not oxidizing
Explosive properties:	Not explosive
Miscibility:	Miscible with Ethanol and Acetone
Viscosity:	N.A.

10. Stability and Reactivity

Stability:	Stable under normal use and storage conditions.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	Heat; light.
Materials to Avoid:	Strong oxidizers.
Hazardous Decomposition Products:	May decompose at high temperatures forming toxic gases.

11. Toxicological Information

Acute Toxicity/Irritation Studies (Finished Product)

Ingestion: Oral (LD50 Rat):	1516 mg/kg body weight
Dermal: Dermal (LD50 Rabbit):	> 2,000 mg/kg body weight
Inhalation: Inhalation (LC50 Rat):	6.28 mg/l air - 4 hours
Eye Contact:	Mild Irritating (Rabbit)
Skin Contact:	Non Irritating (Rabbit)
Skin Sensitization:	Not Available

Long Term Toxicity (Technical)

Did not show carcinogenic, teratogenic or mutagenic effects in animal experiments. Reproductive toxicity noted in rats that is not relevant to humans. Central nervous system effects in chronic/subchronic animal tests. No adverse effects in humans are expected at

levels below the occupational exposure limit and when the product is handled and used according to the label. This information applies to Emamectin benzoate.

12. Ecological Information (Technical)

ELIMINATION INFORMATION

Bioaccumulation: Emamectin benzoate does not bioaccumulate.

Stability in water: Degradation half life: 8 d. Emamectin benzoate is not persistent in water.

Stability in soil: Emamectin benzoate is not persistent in soil.

Mobility: Emamectin benzoate is immobile in soil.

ECOTOXICITY EFFECTS

Toxicity to Birds: LD₅₀ = 46 mg/kg (mallard duck)

LD₅₀ = 264 mg/kg (bobwhite quail)

Acute toxicity to fish: LC₅₀ (96 h) = 6.8 mg/L (Cyprinus carpio [carp])

LC₅₀ (96 h) = 1430 µg/L (sheepshead minnow)

Growth inhibition, Algae: EbC₅₀ (72 h) = 28.4 mg/L (Selenastrum capricornutum)

ErC₅₀ (72 h) = 157 mg/L (Selenastrum capricornutum)

Toxicity to aquatic Invertebrates: LC₅₀ (48h) = 0.08 mg/L (Daphnia magna (water flea))

Toxicity to soil dwelling organisms: LC₅₀ (14 days) = >1000 mg/kg (earthworms)

Toxicity to Bees: LD₅₀ = 0.0036 µg/bee

13. Disposal Considerations

Product

Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging

Empty remaining contents. Triple rinse containers. Empty containers should be taken for local recycling or waste disposal. Do not re-use empty containers.

14. Transport Information

Rail / Road (RID/ADR) UN-No: 3077

Class: 9

Packaging Group: III

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Emamectin benzoate)

Sea (IMDG-Code) UN-No: 3077

Class: 9

Packaging Group: III

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Emamectin benzoate)

MARINE POLLUTANT: Yes

Air (ICAO/IATA) UN-No: 3077

Class: 9

15. Regulatory Information

Labelling according to EC Directives

Hazardous components which must be listed on the label:

• **emamectin benzoate**

Symbol(s):	Xn	Harmful
	N	Dangerous for the environment
R-phrase(s):	R22 Harmful if swallowed.	
	R48/22 Harmful: danger of serious damage to health.	
	R50/53 Very toxic to aquatic organisms.	
S-phrase(s):	S 2 Keep out of the reach of children.	
	S13 Keep away from food, drink and animal feeding stuffs.	
	S20/21 When using do not eat, drink or smoke.	
	S35 This material must be disposed of in a safe way.	

Note: The product is classified and labeled in accordance with Directive 1999/45/EC.

16. Other Information

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are resented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulations containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS. Accordingly, no guarantee or warrantee expressed or implied is made by Global Agrichemical (PTY) LTD as to the results to be obtained based upon the user's use of the information, nor does Global Agrichemical (PTY) LTD assume any liability arising out of user's use of the information.