



## MATERIAL SAFETY DATA SHEET

PRODUCT : Emamectin Benzoate 3% + Indoxacarb 11% SC

PRODUCT DESIGNATION : Systemic Insecticide

### **Section 1. Product & Company Identification**

Common Name : Emamectin Benzoate - Emamectin  
Indoxacarb - Indoxacarb

Grade : Formulation

Active Ingredient : Emamectin Benzoate + Indoxacarb

Chemical Name of Active : **Emamectin Benzoate** - benzoic  
Ingredient (IUPAC) acid;(1'R,2R,3S,4'S,6S,8'R,10'E,12'S,13'S,14'E,16'E,20'R,21'R,24'S)-  
2-[(2S)-butan-2-yl]-21',24'-dihydroxy-12'-[(2R,4S,5S,6S)-4-  
methoxy-5-[(2S,4S,5S,6S)-4-methoxy-6-methyl-5-  
(methylamino)oxan-2-yl]oxy-6-methyloxan-2-yl]oxy-3,11',13',22'-  
tetramethylspiro[2,3-dihydropyran-6,6'-3,7,19-  
trioxatetracyclo[15.6.1.1<sup>4,8</sup>.0<sup>20,24</sup>]pentacosa-10,14,16,22-tetraene]-2'-  
one  
**Indoxacarb** - methyl (4*a*S)-7-chloro-2-[methoxycarbonyl]-  
[4-(trifluoromethoxy)phenyl]carbonyl]-3,5-  
dihydroindeno[1,2-e][1,3,4]oxadiazine-4*a*-carboxylate

Chemical Family of A. I. : **Emamectin Benzoate** – Avermectin  
**Indoxacarb** - Oxadiazine

Molecular Formula of A. I. : **Emamectin Benzoate** - C<sub>56</sub>H<sub>81</sub>NO<sub>15</sub>  
**Indoxacarb** - [C<sub>3</sub>H<sub>4</sub>N<sub>2</sub>O](#)

Molecular Mass of A. I. : **Emamectin Benzoate** - 1008.3  
**Indoxacarb** - 527.8

Manufacturer & Supplier : **M/s PERFECT SOLUTIONS**  
**Office Add:** B-371, Paschim Vihar, New Delhi - 110063 (India)  
**Factory Add:** 15/1, 15/2, 15/3 Industrial Estate, Vidisha - 464001 (M.P)

Telephone Number & : +91 8375844625



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## Section 2. Composition / Information on Ingredients

<b>Name of Components</b>	<b>Concentration% w/w</b>
Emamectin Benzoate a.i	3.00% w/w
Indoxacarb	11.00% w/w
Inert Ingredients	86.00% w/w
<b>TOTAL</b>	<b>100.00% w/w</b>

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## Section 3. Hazards Identification

**Health Hazards :** The sulfonylurea herbicides are generally of low toxicity in mammalian studies. Animal studies showed low acute toxicity and little chronic, reproductive, or developmental toxicity or teratogenic effects. Developmental or teratogenic effects tended only to occur at high or maternally toxic doses.

**Emergency :** Warning! Keep out of reach of children. Toxic if swallowed and inhaled. Contact can cause eye or skin irritation.

**Skin and Eyes :** Avoid contact with mouth, skin and eyes.

**Entry route :** Ingestion, Inhalation, Contact with eye or skin.

**Symptoms of poisoning :** Eye contact may initially cause eye irritation with discomfort, tearing or blurring of vision. Repeated dermal exposure may lead to skin irritation with discomfort or rash.

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## Section 4. First Aid Measures

**Ingestion :** If swallowed, induce vomiting by tickling the back of throat. Repeat it until the vomit is clear. Do not induce vomiting if the patient is unconscious.

**Eye :** If eyes are contaminated, flush with plenty of clean water for about 10-15 minutes.

**Skin :** If clothing and skin are contaminated, remove the clothes and wash the contaminated skin with copious amount of soap and water.

**Inhalation :** If inhaled, get the victim into fresh air.

**Advice to Physician :** No specific Antidote is known. Treat symptomatically

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## Section 5. Fire Fighting Measures

**Specific Hazard :** There is no risk of an explosion from this product under normal circumstances if involved in a fire.



**Extinguishing Media** : Extinguish fire using media suited to burning material. If containers are ruptured contain all runoff. CO<sub>2</sub>, Foam or dry chemical are preferred. Soft stream water fog or fine water sprays if no alternatives. Contain all runoff.

**Hazard From Combustion products** : If involved in a fire, it will emit toxic and noxious fumes of oxides of carbon, nitrogen or sulfur. Firefighters to wear self-contained breathing apparatus and suitable protective clothing if risk to of exposure to vapour or smoke.

**Protective equipment** : Wear full protective clothing and self-contained breathing apparatus. Do not breathe or contact smoke, gases or vapours generated.

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## Section 6. Accidental Release Measures

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**In Case of Emergency** : Isolate and post spill area. Wear cotton overalls buttoned to the neck and wrist, washable hat, elbow-length PVC gloves and eye/face protection to prevent skin and eyes being affected. Evacuate unprotected and unnecessary personnel from area of spill. If material is leaking from a container, stop the leak only if this can be done safely. Prevent spillage entering drains or watercourses. Contain spill and absorb spilled material with absorbent material such as sand, clay or cat litter and dispose of waste as per regulations.

**Clean up Procedures** : To decontaminate spill area, tools and equipment, wash with detergent and water and add the solution to the drums of wastes already collected and label contents. Do NOT allow spilled product or wash solution to enter sewers, drains, dams, creeks or any other waterways.

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## Section 7. Handling & Storage

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**Handling** : Ensure containers are kept closed until using product. Avoid contact with eyes and skin. Wear cotton overalls buttoned to the neck and wrist, washable hat and elbow-length PVC gloves.

**Storage** : DO NOT store near (or allow to contact) fertilizers, fungicides or pesticides. Store in the closed original container, in a cool well ventilated area, out of direct sunlight. Store in a room or place away from children, animals, food, feed stuffs, seed and fertilizers.

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## Section 8. Exposure Control, Personal Protection

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**Engineering Controls** : Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.



**Ingestion** : DO NOT eat, drink or apply cosmetics, where there is a potential for exposure to the product.

**Eye Protection** : Safety goggles, chemical splash goggles or face shield for eyes protection should be used. Safety showers and eye wash should be easily available.

**Skin Protection** : Chemical resistant gloves, coveralls socks, apron and chemical resistant foot covering should always be used while handling the product.

**Respiratory protection** : Always use NIOSH/MSHA approved respiratory protection equipment with a universal filter type including particle filter.

**General Protection** : Avoid contact with eyes and skin. While handling the product wear cotton overalls buttoned to the neck and wrist. Elbow-length PVC gloves and face shield. After use and before eating, drinking and smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves and contaminated clothing.

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## Section 9. Physical and Chemical Properties

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Appearance / state	: Off white Liquid Suspension
Colour	: Off white
Odour	: Characterstic odour
Explosive Properties	: Non-Explosive
Ph	: 3-7
Stability	: Stable under normal temperature and pressure

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## Section 10. Stability & Reactivity

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Chemical Stability : Stable at normal temperatures and storage conditions.

Conditions to Avoid : Not available

Hazardous decomposition products : Not available

Hazardous Reactions : Hazardous polymerization will not occur.

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## Section 11. Toxicological Information

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<b>Acute Oral LD50</b>	: For Rat >800 mg/kg
<b>Acute Dermal LD50</b>	: For Rat >5,000 mg/kg
<b>Acute Inhalation LC50</b> : For Rat(4hr)	: >2.0 mg/l
<b>Skin Irritation</b>	: Rabbit (no skin irritation)



**Eye Irritation** : Rabbit (no eye irritation)

**Skin Sensitization** : Did not cause sensitization on lab

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## Section 12. Ecological Information

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Toxic to Fish and Honeybees

Do not contaminate ponds and waterways by direct application, cleaning of equipment, disposal of wastes and empty container. Keep livestock and wildlife out of treated areas.

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## Section 13. Disposal Consideration

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**Disposal** : This material must be disposed of as a Hazardous Waste. Disposal should be in accordance with local, nation or state rule and regulations.

**Disposal of empty Containers** : Break, crush, or puncture and deliver empty packaging for appropriate disposal to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. DO NOT burn empty containers or product.

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## Section 14. Transport Information

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### IMDG Classification

**Shipping name** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
SOLID, N.O.S.

**Class** : 9

**Packing group** : III

**UN number** : 3082

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## Section 15. Regulatory Information

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### Risk Phrase

**R 23/25**: Toxic by inhalation and if swallowed

**R 51/53**: Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

### Safety phrase



**S 1/2:** Keep locked up and out of reach of children.

**S 26:** In case of contact with eyes rinse immediately with plenty of water and seek medical advice.

**S 35:** The material and its container must be disposed-off in a safe way

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## **Section 16. Other Information**

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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 presented 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 in 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(s) 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.

**Safety Division : PERFECT SOLUTIONS, SAFETY DIVISION**