



## MATERIAL SAFETY DATA SHEET

### *Acimectin 2 EC*

#### IDENTIFICATION OF THE SUPPLIER:

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#### PRODUCT IDENTIFICATION:

**Common Name:** Emamectin benzoate  
**Trade Name:** Acimectin 2 EC  
**Chemical Name:** (4"R)-5-O-demethyl-4"-deoxy-4"-  
(methylamino)avermectin A1a + (4"R)-5-O-demethyl-25-de(1-  
methylpropyl)-4"-deoxy-4"-(methylamino)-25-(1-methylethyl)avermectin  
A1a (9:1)  
**Chemical Formula:** C<sub>56</sub>H<sub>81</sub>NO<sub>15</sub> (B1a); C<sub>55</sub>H<sub>79</sub>NO<sub>15</sub> (B1b)  
**Molecular Weight:** 1008.3 (B1a); 994.2 (B1b)

#### PRODUCT COMPOSITION:

<i>Active Ingredient:</i>	CAS #	% w/v
Emamectin benzoate	[155569-91-8]	2 % w/v
<i>Inert ingredient:</i>		
Emulsifier		10 % w/v
Solvent		Up to 1 liter.





## HAZARDS IDENTIFICATION:

### Symptoms of Acute Exposure

Harmful if inhaled or swallowed. Causes severe eye irritation Injury may Be permanent. May cause skin irritation. 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 incoordination), and dilated pupils (mydriasis). Exposure to high vapor levels may cause headache, dizziness, numbness, nausea, in coordination, or other central nervous system effects.

### Hazardous Decomposition products

Can decompose at high temperatures forming toxic gases.

## FIRST AID MEASURES:

**Swallowed:** If poisoning occurs, contact a doctor or poisons information Centre for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling doctor does not give anything by mouth to an unconscious person.

**Eye contact:** Hold eye open and Rinse slowly and gently with clean water for at least 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call doctor for treatment advice.

**Skin contact:** Carefully remove contaminated clothing. Wash affected area thoroughly with soap and water. Seek medical aid if at all worried.

**Inhalation:** If inhaled, remove to fresh air and keep at rest. Obtain medical advice if at worried. If breathing stops or failing, start artificial respiration.

**First Aid Facilities:** Eye wash, water, soap.





### **Advice to Doctor:**

Contains petroleum distillate – vomiting may cause aspiration pneumonia.

Probable mucosal damage may contraindicate the use of gastric lavage. Early signs of intoxication include dilation of pupils, muscular incoordination and muscular tremors. 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. In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since emamectin benzoate 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.

## **FIRE FIGHTING MEASURES**

### **Fire and Explosion**

Flash Point (Test method):	143 F°	
Flammable Limits (% in air):	Lower: 1.0%	upper: 8.0%
Auto ignition Temperature:	559 F°	
Flammability:	Combustible liquid	

### **Unusual Fire, Explosion and Reactivity Hazards**

During a fire, irritating and possibly toxic gases may be generated By thermal decomposition or combustion.

Combustible liquid. Can release vapors that form explosive

Mixtures at temperatures at or above the flash point .Heavy vapors

Can flow along surfaces to distant ignition sources and flash back.

### **In Case of Fire**

Use appropriate extinguishing media for combustibles in the area.

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 building, area, and

Equipment until decontaminated. Water runoff can cause

environmental damage. If water is used to fight fire, dike and collect

Runoff





## ACCIDENTAL RELEASE MEASURES:

### *In Case of Spill or Leak*

Control the spill at its source. Contain the spill to prevent from spreading Or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions in protective Equipment Section. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent. Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

## HANDLING AND STORAGE:

**Handling and Storage:** Store in the closed original container, in a dry, cool, well ventilated area out of direct sunlight. Do not store with seed, feed, foodstuffs, Keep away from children, 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.

## EXPOSURE CONTROLS/ PERSONAL CONTROL

- Ingestion:*** Prevent eating, drinking, tobacco usage and cosmetic Application in areas where there is a potential for Exposure To the material. Wash thoroughly with Soap and water after Handling.
- Eye Contact:*** where eye contact is likely, use chemical splash goggles Facilities storing or utilizing this material should be Equipped with an eyewash facility and a safety shower.
- Skin contact:*** Where contact is likely, wear chemical-resistant, gloves, Coveralls, socks and chemical-resistant footwear. For For overhead exposure, wear chemical-resistant Headgear.
- Inhalation:*** Use process enclosures, local exhaust ventilation, or other Engineering controls to keep airborne levels below with Exposure limits. Used air-purifying respirator class Filter and an organic vapor cartridge may be permissible





Under certain circumstances where airborne. Concentrations are expected to exceed exposure limits Protection provided by air-purifying respirators is Limited. Use a pressure demand atmosphere – supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

### PHYSICAL AND CHEMICAL PROPERTIES:

**Appearance:** Pale yellow –green liquid  
**Odor:** Sweet, oily.  
**PH:** 5.58  
**Vapor pressure:**  
Emamectin Benzoate:  $3 \times 10^{-8}$  mmHg 70F° (21C°)

**Boiling point:** Not applicable.  
**Melting point:** Not applicable.  
**Solubility in water:**  
Emamectin Benzoate: 0.024 g /l (pH 7, 77 F°, (25 C°)

### STABILITY AND REACTIVITY:

**Chemical stability:** Stable under normal conditions of use.  
**Hazardous Polymerization:** Will not occur.

**Hazardous Decomposition products:** Canecompose at high temperatures forming Toxic gases.

**Conditions to avoid:** Heat; light.  
**Materials to Avoid:** Strong oxidizers.



## TOXICOLOGICAL INFORMATION

### Acute Toxicity/ Irritation Studies (Finished Product)

**Ingestion:** Slightly Toxic  
Oral (LD50 Rat): =2,950 mg /kg body weight

**Dermal:** Slightly Toxic  
Dermal (LD50 Rabbit) :> 2,000 mg / kg body weight

**Inhalation:** Practically Non-Toxic  
Inhalation (LC50 Rat): =9.6 mg /l air -4 hours

**Eye contact:** Severely irritating (Rabbit)

**Skin contact:** Slightly irritating (Rabbit)

**Skin Sensitization:** Not Available.

### Reproductive / Developmental Effects

Emamectin Benzoate: Developmental and reproductive toxicity observed in dosages that are toxic to mature animals.

### Chronic / Sub chronic Toxicity Studies

Emamectin Benzoate: Tremors and nerve lesions observed at lowest dose tested in rabbits. Bladder changes reported in rats.

### Carcinogenicity

Emamectin Benzoate: None observed.

### Other Toxicity Information

None

## ECOLOGICAL INFORMATION

### Summary of Effects:

Emamectin Benzoate: very toxic to aquatic organisms. Toxic to Bees. May cause Long-term adverse Effects in the environment.





**Eco-Acute Toxicity**

Emamectin Benzoate: Bees LC50/EC50 0.0036 µg/bee  
Invertebrates (Water Flea) LC50/EC50 0.001 ppm  
Fish (Trout) LC50 /EC50 0.174 pm  
Fish (Bluegill) LC50/EC50 0.18 ppm  
Birds (8-day dietary-Bobwhite Quail) LC50/EC50 1,318  
Birds (8-day dietary-Mallard Duck) LC50/EC50 570 ppm

**Eco-Chronic Toxicity**

Emamectin Benzoate: Not Available

**Environmental Fate:**

Emamectin Benzoate: No data available for the formulation. The information presented here is for the active ingredient, emamectin benzoate.

**DISPOSAL CONSIDERATIONS:**

**Disposal:**

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state and federal health and environmental regulations.

Characteristic Waste: Not applicable  
Listed Waste: Not applicable.

