Material Safety Data Sheet

Section 01. Identification of the substance/mixture and the company/undertaking

Product Name: EMAMECTIN BENZOATE 2.2%EC (W/V)

Product Code:

Chemical Formula: $C_{56}H_{81}NO_{15}$

Use of the substance/mixture: Insecticide

Company: Hangzhou Ruijiang Chemical Co., Ltd.

Floor 12th, No.99, Huaxing Road, Hangzhou, Zhejiang, P.R.China

Tel: +86-571-28006098

Fax: +86-571-88920671

E-mail: ruiagro01@ruijianggroup.com

Emergency phone No.: +86-571-28006092 (only available in working days)

Section 02. Composition/information on ingredients

Ingredients:

Ingredients	CAS No.	OSHA PEL.	ACGIH TLV	Other	NTP/IARC/OSHA carcinogen
EMAMECTIN BENZOATE 2.2%EC	137512-74-4	Not Established	Not Established	Not Established	No

Section 03. 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, incoordination, or other central nervous system effects.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

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 flow along surfaces to distant ignition sources and flash back.

Section 04. First aid measures

Ingestion: Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Eye Contact: 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. Call a poison control center or doctor for treatment advice.

Skin Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Inhalation: Move person to fresh air. If person is not breathing, call an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Notes to Physician

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 (such as maintenance of blood pressure levels and proper respiratory functionality) 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.

Section 05. Fire-fighting measures

Fire and Explosion

Flash Point(Test Method):	143°F	
Flammable Limits(% in Air):	Lower: 1.0%	Upper: 8.0%
Autoignition 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 buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

Section 06. 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 (e.g. commercial products such as Tide, Joy, Spic and Span). 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.

Section 07. Handling and 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.

Section 08. Exposure controls/personal protection

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

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 (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

Inhalation: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE 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.

Section 09. Physical and chemical properties

Formulation

Appearance: Light yellow liquid

Odour: Light smell

Specific gravity 0.86 g/ml @ 77°F (25°C)

Melting point Not Applicable

Boiling Point: Not Applicable

PH: 6.3

Emamectin benzoate

Appearance: White or almost white crystalline powder

Odour: Odourless

Vapor Pressure: 3 x 10(-8) mmHg @ 70°F (21°C)

Melting point: 141-146℃

Solubility in water: 0.024 g/l (pH 7, 77°F, (25° C))

Section 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:	Can decompose at high temperatures forming toxic gases.

Section 11. Toxicological properties

Acute Toxicity/Irritation Studies (Formulation)

Ingestion:	Oral (LD50 Rat) : 3160 mg/kg body weight
Dermal:	Dermal (LD50 Rabbit) ＞2150 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) : 9.6 mg/l air - 4 hours
Eye Contact:	Moderately Irritating (Rabbit)
Skin Contact:	Moderately Irritating (Rabbit)
Skin Sensitization:	Slightly Irritating (Rabbit)

Subchronic Toxicity Studies (Emamectin Benzoate)

90 days feeding dog no effect level: 0.25 mg/kg body weigh/day

Carcinogenicity and chronic study(Emamectin Benzoate)

26 months feeding rat no effect level: 1.0 mg/kg/day

Reproductive/Developmental Effects

A 2-generation reproduction study in rats was conducted. The systemic toxicity NOAEL was 0.6 mg/kg/day. The systemic toxicity LOAEL of 1.8 mg/kg/day was based on decreased body weight gain and histopathological changes (neuronal degeneration in the brain and spinal cord) in both sexes and generations. The reproductive toxicity NOAEL was 0.6 mg/kg/day. The reproductive toxicity LOAEL of 1.8 mg/kg/day was based on decreased fecundity and fertility indices and clinical signs (tremors and hind limb extension) in offspring of both generations.

Section 12. 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 0.0036μg/bee
Invertebrates (Water Flea) LC50/EC50 0.0099ppm

Fish (Trout) LC50/EC50 0.174 ppm
Fish (Bluegill) LC50/EC50 0.18 ppm
Birds (8-day dietary - Bobwhite Quail) LC50/EC50 1318 ppm
Birds (8-day dietary - Mallard Duck) LC50/EC50 570 ppm

Section 13. 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

Section 14. Transport information

DOT Classification

Proper Shipping Name: Pesticides, Flammable liquid, Emamectin Benzoate 1.9%EC, Marine Pollutant
Hazard Class or Division: Division 3
Identification Number: UN1230
Packing Group: PG II

B/L Freight Classification

Insecticides, N.O.I. O/T poison

Section 15. Regulatory information

OSHA Status: not listed
TSCA Status: not listed

Section 16. Other information

The information that provided in this MSDS is correct to the best of our knowledge. The information given is designed only as guidance for safety, handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification.