MATERIAL SAFETY DATA SHEET
Absolute 5 ME

IDENTIFICATION OF THE SUPPLIER:

AGRO CHEMICALS INDUSTRIES LTD
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IDENTIFICATION OF THE PRODUCT:

Trade name:	Absolute 5 ME
Uses:	Insecticide
Type of formulation:	Microemulsion
Common name:	Emamectin benzoate
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
Empirical formula:	C56H81NO15 (B1a); C55H79NO15 (B1b)

COMPOSITION OF PRODUCT:

Active ingredient:
Emamectin benzoate **5% w/v** **[119791-41-2]**

Inert ingredient: **up to 100%**

HAZARD IDENTIFICATION:

Health and Environmental:

Causes eye and skin irritation. May be harmful if swallowed. Harmful if inhaled. Vapors may cause drowsiness and dizziness.
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).

Hazardous Decomposition Products

May 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

FIRST AID MEASURES:

Inhalation: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice

Skin contact: If on skin or clothing: 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

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

Ingestion: If swallowed: 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 after calling a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Notes to physician: Contains petroleum distillate - vomiting may cause aspiration pneumonia.

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Early signs of intoxication include dilation of pupils, muscular incoordination and muscular tremors. Vomiting within one half hour of exposure can minimize toxicity following accidental ingestion of the product; rapidly after exposure (<15 minutes) administer repeatedly medical charcoal in a large quantity of water or ipecac. If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parental 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

FIRE-FIGHTING MEASURES:

Fire and Explosion

Flash Point (Test Method):	
Flammable Limits (% in Air):	> 226°F (Pensky-Martens CC)
Autoignition Temperature:	
Flammability:	Lower: Not Applicable Upper: Not Applicable
	662°F
	Not Applicable
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

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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.

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 outlined in Section 8. 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.

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.

EXPOSURE CONTROL/ 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.

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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

(Such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride [PVC] or Viton),

coveralls, socks and chemical-resistant footwear. For

overhead exposure, wear chemical-resistant headgear.

Inhalation: A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

Case of emergency spills, use a NIOSH approved respirator with any R, P or In HE filters.

PHYSICAL AND CHEMICAL PROPERTIES:

Color:	Light brown clear liquid
Odor:	mild odor
PH:	7.8
Density:	0.97 g/ ml ± 0.05
Water solubility:	Completely miscible

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STABILITY AND REACTIVITY:

Stability:	Stable under normal use and storage conditions.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	None known
Materials to Avoid:	None known
Hazardous Decomposition Products:	May decompose at high temperatures forming toxic gases

TOXICOLOGICAL INFORMATION:

Acute Toxicity/Irritation Studies (Finished Product)

Ingestion:	Oral (LD50 Female Rat):	3129 mg/kg body weight
Dermal:	Dermal (LD50 Rat):	> 5000 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat):	> 2.54 mg/l air - 4 hours
Eye Contact:	Severely Irritating (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects:
Developmental and reproductive toxicity observed in dosages that are toxic to mature animals.

Chronic/Subchronic Toxicity Studies:
Tremors and nerve lesions observed at lowest dose tested in rabbits.
Bladder changes reported in rats

Carcinogenicity:
None observed.

ECOLOGICAL INFORMATION:

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Summary of Effects
Very toxic to aquatic life with long lasting effects.

Ecotoxicity Effects:

Fish (Rainbow Trout) 96-hour LC50 174 ppb

Fish (Bluegill Sunfish) 96-hour LC50 180 ppb

Green Algae 5-day EC50 > 3.9 ppb

Bird (Bobwhite Quail) LD50 Oral 264 mg/kg
Bee (Contact) LD50 0.0035 ug/bee

Invertebrate (Water Flea) 48-hour EC50 1.0 ppb

Environmental Fate:

The information presented here is for the active ingredient, emamectin benzoate.
Low bioaccumulation potential. Persistent in soil. Stable in water.
Immobile in soil. Sinks in water (after 24 h).

DISPOSAL CONSIDERATIONS

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection

point. If not recycling, break, crush or puncture and deliver empty packaging to an approved waste management facility. DO NOT burn empty containers.

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