

Syngenta Canada Inc.
140 Research Lane, Research Park
Guelph, ON N1G 4Z3

**In Case of Emergency, Call
1-800-327-8633 (FAST MED)**

Date of MSDS Preparation (Y/M/D): 2011-12-31

Supersedes date (Y/M/D): 2008-12-31

MSDS prepared by:
Department of Regulatory & Biology Assessment
Syngenta Canada Inc.

For further information contact:
1-87-SYNGENTA (1-877-964-3682)

SECTION – 1: PRODUCT IDENTIFICATION

Product Identifier: AGRI-MEK® 1.9% EC Insecticide Formulation No.: A8612A
Registration Number: 24551 (Pest Control Products Act)
Chemical Class: Glycoside Insecticide.

Active Ingredient (%): Abamectin (1.98%) CAS No.: 65195-56-4 & 65195-55-3
Chemical Name: A mixture of avermectins containing Avermectin B1a and Avermectin B1b.
Product Use: Insecticide. Please refer to product label for further details.

SECTION – 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS†
Mineral Oil	5 mg/m ³ (mist)	5 mg/m ³ (mist); 10 mg/m ³ (STEL)	5 mg/m ³ (mist); 10 mg/m ³ (STEL) **	No	Not Established
Butylated Hydroxytoluene (BHT)	Not Established	2 mg/m ³ TWA (inhalable)	10 mg/m ³ TWA **	IARC Group 3	Yes
n-Methylpyrrolidone (≤ 30%)	Not Established	Not Established	10 ppm TWA****	No	Not Established
n-Hexyl Alcohol (≤ 30%)	Not Established	Not Established	Not Established	No	Yes
Abamectin Technical (1.9%)	Not Established	Not Established	0.02 mg/m ³ TWA ***	No	Not Established

** Recommended by NIOSH

*** Syngenta Occupational Exposure Limit (OEL)

**** Recommended by AIHA (American Industrial Hygiene Association)

† Material listed in Ingredient Disclosure List under Hazardous Products Act.

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: C, S

SECTION – 3: HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

Harmful or fatal if swallowed. May be harmful if absorbed through the skin. Causes eye and skin irritation. Allergic skin reactions are possible. Vapours may cause drowsiness and dizziness. May be harmful if swallowed and enters airway.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Yellow to red-brown liquid.
Odour: Not determined. Avoid breathing vapours.

Unusual Fire, Explosion and Reactivity Hazards

Combustible liquid. Can release vapours that form explosive mixtures at temperatures at or above the flash point. Heavy vapours can flow along surfaces to distant ignition sources and flash back. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

SECTION – 4: FIRST AID MEASURES

IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital. Have the product container, label or Material Safety Data Sheet with you when calling Syngenta, a poison control center or doctor, or going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Call the Syngenta Emergency Line [**1-800-327-8633 (1-800-FASTMED)**], for further information.

EYE CONTACT: Flush eyes with clean water, holding eyelids apart for a minimum of 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta, a poison control center or doctor for treatment advice. Obtain medical attention immediately if irritation persists.

SKIN CONTACT: Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with plenty of water for 15-20 minutes. Call Syngenta, a poison control centre or doctor for treatment advice.

INHALATION: Move victim to fresh air. If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call Syngenta, a poison control centre or doctor for treatment advice.

INGESTION: If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Do not induce vomiting unless directed by a physician or a poison control center. Do not give **any** liquid to the person. Call Syngenta, a poison control centre or doctor for treatment advice.

NOTES TO PHYSICIAN:

Contains petroleum distillate - vomiting may cause aspiration pneumonia.

Persons suffering a temporary allergic reaction may respond to treatment with antihistamines or steroid creams and/or systemic steroids.

Recommendations for Medical Treatment for Abamectin Acute Toxicity: Early signs of intoxication include dilation of pupils, muscular incoordination, and muscular tremors. Toxicity following accidental ingestion can be minimized by early administration of chemical absorbents (e.g. 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 (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms and measurements.

Abamectin is believed to enhance GABA activity in animals. It is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid, etc.) in patients with potentially toxic abamectin exposure.

SECTION – 5: FIRE FIGHTING MEASURES

Flash point and method: 72 °C

Upper and lower flammable (explosive) limits in air: Not applicable.

Auto-ignition temperature: Not available.

Flammability: Combustible liquid. Class IIIA.

Hazardous combustion products: Toxic gases including carbon monoxide, carbon dioxide, oxides of nitrogen, and smoke.

Conditions under which flammability could occur: Temperatures above the flash point. Keep fire exposed containers cool by spraying with water. Heavy vapours can flow along surfaces to distant ignition sources and flash back.

Extinguishing media: For small fires, use foam, carbon dioxide, dry powder or halon extinguishant. For large fires, use foam or water-fog; avoid use of water jet. Water spray may be ineffective as an extinguishing medium but may be used to cool fire-exposed containers and to flush non-ignited spills or vapours away from sources of ignition. 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. Contain run-off water with, for example, temporary earth barriers.

Sensitivity to explosion by mechanical impact: No.

Sensitivity to explosion by static discharge: Low.

SECTION – 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective equipment and clothing as described in Section 8 and/or the product label.

Procedures for dealing with release or spill: Control the spill at its source. Contain the spill to prevent material 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 Sections 7 and 8. Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Scoop or sweep up material and place into a disposal container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into compatible disposal container. On soils, small amounts will naturally decompose. For large amounts, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposal. Spillages or uncontrolled discharges into watercourses must be reported to the appropriate regulatory authority.

SECTION – 7: HANDLING AND STORAGE

Handling practices: KEEP OUT OF REACH OF CHILDREN and animals, and away from open flames or other sources of ignition. **Avoid contact with eyes, skin or clothing and avoid breathing vapour or spray mist.** Wear full protective clothing and equipment (see Section 8). After work, rinse gloves and remove protective equipment, and wash hands before eating, handling tobacco, drinking, applying cosmetics or using the toilet. Clean up spilled product immediately, and clean clothes and equipment after use. Wash contaminated clothing before re-use and separate from household laundry. Keep product, spray, wash or rinse water, and contaminated materials out of water, and away from access by animals, bees, and unauthorized people. Keep containers closed when not in use. Do not re-enter treated areas until residues have dried.

Appropriate storage practices/requirements: Store in original container only in a well-ventilated, cool, dry, secure area. Protect from heat, sparks and flame. Do not expose sealed containers to temperatures above 40 °C. Keep separate from other products, food, or feed to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

National Fire Code classification: Class IIIA combustible liquid.

SECTION – 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Applicable control measures, including engineering controls: Ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

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

CONSULT THE PRODUCT LABEL FOR ADDITIONAL PRECAUTIONS.

Personal protective equipment for each exposure route:

General: Avoid breathing vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, applying cosmetics and using tobacco.

INGESTION: Do not eat, drink, handle tobacco, 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: 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 effective engineering controls to comply with occupational exposure limits. In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

SECTION – 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Yellow to red-brown liquid.

Formulation Type: Emulsifiable concentrate.

Odour: Do not test for odour to avoid breathing vapours.

pH: 2.6 – 3.6 (10% Aqueous Solution).

Vapour pressure and reference temperature: 7.5×10^{-8} mmHg @ 25°C (Abamectin technical).

Vapour density: > 1.

Boiling point: Not available.

Melting point: Not applicable.

Freezing point: -34 °C.

Specific gravity or density: 0.96 g/mL @ 20 - 25 °C

Evaporation Rate: Not available.

Water/oil partition coefficient: Not available.

Odour threshold: Not available.

Viscosity: 16.1 mPas (or cps) @ 21 °C

Solubility in Water: 0.007 – 0.01 mg/L @ 20°C (Abamectin technical).

SECTION – 10: STABILITY AND REACTIVITY

Chemical stability: Stable at room temperature.

Conditions to avoid: High temperatures, sparks, open flames. Keep away from sources of ignition.

Incompatibility with other materials: Strong caustic solutions, strong acid solutions, oxidizing agents.

Hazardous decomposition products: Can decompose at high temperatures forming toxic gases.

Hazardous polymerization: Will not occur.

SECTION – 11: TOXICOLOGICAL INFORMATION**Acute toxicity/Irritation Studies (Finished Product):**

Ingestion:	<u>Moderately Acute Toxic</u> Oral (LD50 Rat):	~ 300 mg/kg body weight
Dermal:	<u>Slightly Acutely Toxic</u> Dermal (LD50 Rabbit):	> 1,800 mg/kg body weight
Inhalation:	<u>Practically Non-Toxic</u> Inhalation (LC50 Rat):	3.5 mg/L air - 4 hours
Eye Contact:	<u>Moderately Irritating (Rabbit)</u>	
Skin Contact:	<u>Moderately Irritating (Rabbit)</u>	

Skin Sensitization: Sensitizing (Guinea Pig)

Reproductive/Developmental Effects

Abamectin: Reproductive toxin in animal studies only at doses acutely toxic to the maternal animal.

Chronic/Subchronic Toxicity Studies

Abamectin: Central nervous system effects in animals.

Carcinogenicity

Abamectin: None observed.

Other Toxicity Information:

ACUTE - Abamectin:

Causes substantial but temporary eye injury. May be fatal if swallowed. Prolonged or frequently repeated exposure may cause allergic skin reactions in some individuals. Early signs of abamectin poisoning include mydriasis (dilated pupils), ataxia (unsteadiness) and muscle tremors.

Toxicity of Other Components

Butylated Hydroxytoluene (BHT)

Listed as an IARC (Group 3) carcinogen; not classifiable as a human carcinogen (no data available) with limited animal evidence. Exposure may result in irritation to eyes, skin and respiratory tract. Ingestion may cause diarrhea, respiratory depression, tremors, and chronic pulmonary edema or congestion and hemorrhage.

Mineral Oil

May cause respiratory irritation when inhaled as a mist.

n-Methylpyrrolidone ($\leq 30\%$)

May cause respiratory tract irritation. Repeated or prolonged exposure may cause drying and cracking of the skin.

Other materials that show synergistic toxic effects together with the product: None known.

Target Organs

Active Ingredients

Abamectin Technical: Skin, eye, CNS

Inert Ingredients

Butylated Hydroxytoluene (BHT): Eye, skin, respiratory tract

Mineral Oil: Respiratory tract

n-Methylpyrrolidone: Eye, skin

SECTION – 12: ECOLOGICAL INFORMATION

Summary of Effects

Abamectin Technical:

Highly toxic to fish, invertebrates and birds.

Eco-Acute Toxicity

Abamectin Technical:

Green Algae 9-Day EC ₅₀	> 100 ppm
Fish (Rainbow Trout) 96-hour LC ₅₀	3.6 ppb
Invertebrates (<i>Daphnia magna</i>) 48-hour LC ₅₀ /EC ₅₀	0.77 ppm
Bird (Bobwhite Quail) LC ₅₀	> 2000 mg/kg

Environmental Fate

Abamectin Technical:

Low bioaccumulation potential. Abamectin degrades rapidly in the environment by photolysis and is metabolized in the soil. It has low mobility and is not persistent in soil.

SECTION – 13: DISPOSAL CONSIDERATIONS

Waste disposal information: Do not reuse empty containers unless they are specifically designed to be re-used. Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture. Dispose of dilution mixtures and other residues according to local regulations if it cannot be disposed of by use according to label instructions. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal. Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

SECTION – 14 : TRANSPORT INFORMATION

Shipping information such as shipping classification:

TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION - ROAD/RAIL

Proper Shipping Name : Pesticide, liquid, toxic, N.O.S. (Abamectin)
Class (Subclass) : 6.1
UN# : UN2902
Packing Group : III

Do not ship with food, feed, seed, cosmetics or medical supplies.

SECTION – 15: REGULATORY INFORMATION

WHMIS classification for product: Exempt

A statement that the MSDS has been prepared to meet WHMIS requirements, except for use of the 16 headings.

This MSDS has been prepared in accordance with WHMIS requirements, but the data are presented under 16 headings.

Other regulations; restrictions and prohibitions

Pest Control Products (PCP) Act Registration No. 24551

SECTION – 16: OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Syngenta will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this MSDS. Read the entire MSDS for the complete hazard evaluation of this product.

Prepared by: Syngenta Canada Inc.
1-87-SYNGENTA (1-877-964-3682)

Syngenta Canada Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date thereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates to the specific product designated and may not be valid where such product is used in combination with any other materials or in any process. Further, since the

conditions and methods of use of the product and of the information referred to herein are beyond the control of Syngenta Canada Inc., Syngenta Canada Inc. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

AGRI-MEK[®] is a trademark of a Syngenta Group Company.