

**Syngenta Crop Protection, Inc.**  
**Post Office Box 18300**  
**Greensboro, NC 27419**

**In Case of Emergency, Call**  
**1-800-888-8372**

**1. PRODUCT IDENTIFICATION**

Product Name: **AVICTA DUO 250** Product No.: A17015A  
 EPA Signal Word: Warning  
 Active Ingredient(%): Abamectin (11.3%) CAS No.: 65195-56-4 & 65195-55-3  
 Chemical Name: A mixture of avermectins containing primarily Avermectin B1a and Avermectin B1b  
 Chemical Class: Glycoside Insecticide  
 Active Ingredient(%): Thiamethoxam (14.2%) CAS No.: 153719-23-4  
 Chemical Name: 4H-1,3,5-Oxadiazin-4-imine,3-[(2-chloro-5-thiazolyl) methyl]tetrahydro-5-methyl-N-nitro-  
 Chemical Class: Neonicotinoid Insecticide  
 EPA Registration Number(s): 100-1353 **Section(s) Revised: New**

**2. HAZARDS IDENTIFICATION**

## Health and Environmental

Fatal if inhaled. Harmful if swallowed. Causes mild eye and skin irritation.

## Hazardous Decomposition Products

None known.

## Physical Properties

Appearance: Beige opaque liquid

Odor: Weak; aromatic

## Unusual Fire, Explosion and Reactivity Hazards

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

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Propylene Glycol	Not Established	Not Established	10 mg/m <sup>3</sup> TWA ****	No
Glycerin	15 mg/m <sup>3</sup> TWA (total); 5 mg/m <sup>3</sup> TWA (respirable)	10 mg/m <sup>3</sup> TWA (total)	Not Established	No
Abamectin (11.3%)	Not Established	Not Established	0.02 mg/m <sup>3</sup> TWA ***	No
Thiamethoxam (14.2%)	Not Established	Not Established	3 mg/m <sup>3</sup> TWA ***	No

\*\*\* Syngenta Occupational Exposure Limit (OEL)

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

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

## 4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

- Ingestion:** If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- 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 Syngenta (800-888-8372), a poison control center or doctor for 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 Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- 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 Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

### Notes to Physician

Early signs of intoxication include dilation of pupils, muscular incoordination and muscular tremors. Toxicity following accidental ingestion of abamectin can be minimized by early administration of chemical adsorbents (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. In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since abamectin 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 abamectin exposure.

### Medical Condition Likely to be Aggravated by Exposure

None known.

## 5. FIRE FIGHTING MEASURES

### Fire and Explosion

- Flash Point (Test Method): > 214°F (Pensky-Martens CC)
- Flammable Limits (% in Air): Lower: Not Applicable Upper: Not Applicable
- Autoignition Temperature: 779°F
- Flammability: 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 CO<sub>2</sub> extinguishing media. 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.

## 6. 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.

## 7. 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.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING 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.
Skin Contact:	Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.
Inhalation:	A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH certified respirator with any N, R, P or HE filter.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Beige opaque liquid
Odor:	Weak; aromatic
Melting Point:	Not Applicable
Boiling Point:	Not Available
Specific Gravity/Density:	1.11 g/cm <sup>3</sup> @ 68°F (20°C)
pH:	6.2 (1% solution in deionized H <sub>2</sub> O @ 77°F [25°C])

### Solubility in H<sub>2</sub>O

Abamectin:	0.007 - 0.01 mg/l @ 68°F (20°C)
Thiamethoxam:	4.1g/l @ 77°F (25°C)
Vapor Pressure	
Abamectin:	7.5 x 10 <sup>(-8)</sup> mmHg @ 77°F (25°C)
Thiamethoxam:	2 x 10 <sup>(-11)</sup> mmHg @ 68°F (20°C)

## 10. 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:	None known.

## 11. TOXICOLOGICAL INFORMATION

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

Ingestion:	Oral (LD50 Female Rat) :	419.4 mg/kg body weight
Dermal:	Dermal (LD50 Rat) :	> 5000 mg/kg body weight
Inhalation:		

Inhalation (LC50 Female Rat) : 0.053 - 0.53 mg/l air - 4 hours  
Eye Contact: Minimally Irritating (Rabbit)  
Skin Contact: Slightly Irritating (Rabbit)  
Skin Sensitization: Not a Sensitizer (Guinea Pig)

#### Reproductive/Developmental Effects

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

Thiamethoxam: Developmental: Not teratogenic in rats or rabbits.

Reproductive: No effects on reproduction. Minor increase in a common testis effect in rats at high doses, which did not affect reproduction. When used in accordance with label directions and recommendations in this MSDS, no effects would be expected in humans.

#### Chronic/Subchronic Toxicity Studies

Abamectin: Central nervous system effects in animals.

Thiamethoxam: Subchronic: Liver effects occurred in rodents only at high dose levels. Not neurotoxic after high acute and subchronic exposure in rats.

#### Carcinogenicity

Abamectin: None observed.

Thiamethoxam: Classified as "not likely to be carcinogenic in humans" based on lifetime studies in mice and rats.

#### Other Toxicity Information

None

#### Toxicity of Other Components

##### Glycerin

Test results reported in Section 11 for the final product take into account any acute hazards related to the glycerin in the formulation.

##### Propylene Glycol

Test results reported in Section 11 for the final product take into account any acute hazards related to the propylene glycol in the formulation.

Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea.

Chronic dietary exposure caused kidney and liver injury in experimental animals.

#### Target Organs

##### Active Ingredients

Abamectin: Skin, eye, CNS

Thiamethoxam: Liver

##### Inert Ingredients

Glycerin: Not Applicable

Propylene Glycol: CNS, kidney, liver

## 12. ECOLOGICAL INFORMATION

#### Ecotoxicity Effects

##### Abamectin:

Fish (Rainbow Trout) 96-hour LC50 3.6 ppb

Bird (Bobwhite Quail) LD50 Oral > 2000 mg/kg

Invertebrate (Water Flea) 48-hour EC50 0.34 ppb

Green Algae 9-day EC50 > 100 ppm

Bee (Contact) 48-hour LD50 0.41 ug/bee

Thiamethoxam:

Fish (Rainbow Trout) 96-hour LC50 > 100 ppm  
Bird (Mallard Duck) LD50 Oral 576 mg/kg  
Invertebrate (Daphnia Magna) 48-hour EC50 > 106 ppm  
Green Algae 4-day EC50 > 97 ppm

Environmental Fate

Abamectin:

The information presented here is for the active ingredient, abamectin.  
Low bioaccumulation potential. Not persistent in soil. Stable in water. Low mobility in soil. Mixes in water (after 24 h).

Thiamethoxam:

The information presented here is for the active ingredient, thiamethoxam.  
Not persistent in soil. Stable in water. Moderate mobility in soil. Floats in water (after 24 h).

### 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

### 14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA  
Not regulated by US DOT.

Air Transport - NAFTA  
Not regulated by US DOT.

B/L Freight Classification

Insecticides, NOI, Not Regulated

Comments

Water Transport - International

Proper shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Abamectin), Marine Pollutant

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packing Group: PG III

IMDG EMS #: F-A, S-F

Air Transport - International

Proper shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Abamectin), Marine Pollutant

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packing Group: PG III

Packing Auth.: 914

Note: Max. inner packages 5 liter; Max. single packages 450 liter

### 15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard  
Chronic Health Hazard

Section 313 Toxic Chemicals: Not Applicable

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

None

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

**16. OTHER INFORMATION**

NFPA Hazard Ratings		HMIS Hazard Ratings		
Health:	3	Health:	3	0 Minimal
Flammability:	1	Flammability:	1	1 Slight
Instability:	0	Reactivity:	0	2 Moderate
				3 Serious
				4 Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 11/17/2009

Revision Date:

Replaces:

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

End of MSDS