

# SAFETY DATA SHEET



Date Issued : 1/7/2016  
SDS No : Avow

**Avow**

## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Avow  
**CHEMICAL FAMILY:** Insecticide

### DISTRIBUTOR

Innvictis Crop Care, LLC  
4850 Hahns Peak Drive, Suite 200  
Loveland, CO 80538

### 24 HR. EMERGENCY TELEPHONE NUMBERS

24-Hour Emergency Assistance Call: 1-800-222-1222  
Chemical Emergency Call CHEMTREC: 1-800-424-9300

**EPA REG. NO.:** 89167-11-89391

## 2. HAZARDS IDENTIFICATION

### GHS CLASSIFICATIONS

#### Health:

Acute Toxicity (Oral), Category 4  
Acute Toxicity (Inhalation), Category 4  
Skin Irritation, Category 3  
Eye Irritation, Category 2A  
Target Organ Toxicity (Repeated exposure), Category 2  
Carcinogenicity, Category 2

#### Environmental:

Acute Hazards to the Aquatic Environment, Category 1  
Chronic Hazards to the Aquatic Environment, Category 1

#### Physical:

Flammable Liquids, Category 4

### GHS LABEL



Exclamation  
mark



Health  
hazard



Environment

**SIGNAL WORD:** WARNING

### HAZARD STATEMENTS

H302: Harmful if swallowed.  
H332: Harmful if inhaled.  
H316: Causes mild skin irritation.  
H319: Causes serious eye irritation.  
H373: May cause damage to eyes, skin, respiratory system, central nervous system, liver and kidneys through prolonged or repeated exposure.  
H351: Suspected of causing cancer.  
H410: Very toxic to aquatic life with long lasting effects.

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H227: Combustible liquid.

**PRECAUTIONARY STATEMENTS****General:**

- P101: If medical advice is needed, have product container or label at hand.  
 P102: Keep out of reach of children.  
 P103: Read label before use.

**Prevention:**

- P201: Obtain special instructions before use.  
 P202: Do not handle until all safety precautions have been read and understood.  
 P210: Keep away from heat, sparks, flames, and hot surfaces. – No smoking.  
 P260: Do not breathe mist, vapors or spray.  
 P264: Wash hands, face and other affected areas thoroughly after handling.  
 P270: Do not eat, drink or smoke when using this product.  
 P271: Use only outdoors or in a well-ventilated area.  
 P273: Avoid release to the environment.  
 P281: Use personal protective equipment as required.

**Response:**

- P370+P378: In case of fire: Use Dry Chemical, CO<sub>2</sub>, water spray, or regular foam for extinction.  
 P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
 P330: Rinse mouth.  
 P304+P340: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
 P332+P313: If skin irritation occurs: Get medical advice/attention.  
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337+P313: If eye irritation persists: Get medical advice/attention.  
 P308+P313: IF exposed or concerned: Get medical advice/attention.  
 P314: Get medical advice/attention if you feel unwell.  
 P391: Collect spillage.

**Storage:**

- P403+P235: Store in a well-ventilated place. Keep cool.  
 P405: Store locked up.

**Disposal:**

- P501: Dispose of contents/container to Local, State and Federal Regulations.

**CARCINOGENICITY:** Some components within this product have been suspected of causing cancer.

**TARGET ORGAN STATEMENT:** Eyes, skin, respiratory system, central nervous system, liver and kidneys. (N-Methyl 2-pyrrolidone)

**SENSITIZATION:** Not a skin sensitizer.

**COMMENTS:** Read all precautions of products being handled and follow the most restrictive language for all products to provide the safest work environment.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Chemical Name	Wt. %	CAS
Abamectin	2	71751-41-2
Other Ingredients	<= 98	Mixture
1-methyl-2-pyrrolidone	21 - 22	872-50-4
Butylated hydroxytoluene	1.4 - 1.6	128-37-0
Ethyl lactate	> 1	687-47-8

**4. FIRST AID MEASURES**

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**EYES:** Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

**SKIN:** 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.

**INGESTION:** Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

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

#### **SIGNS AND SYMPTOMS OF OVEREXPOSURE**

**CHRONIC EFFECTS:** Abamectin is a central nervous system depressant. Overexposure to abamectin may also affect skin and eyes. Abamectin is a GABA agonist. GABA is a major inhibitory neurotransmitter. Repeated overexposure to N-Methyl 2-pyrrolidone (NMP) may cause effects to the eyes, skin, respiratory system, central nervous system, liver and kidneys. Repeated overexposure to ethyl lactate may cause effects to eyes, skin and respiratory system. Inhalation of high vapor concentrations can cause central nervous system depression and narcosis.

**NOTES TO PHYSICIAN:** Early signs of intoxication due to overexposure include dilation of pupils, muscular incoordination, and muscle tremors. Toxicity following accidental ingestion of this product 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.

**ADDITIONAL INFORMATION:** Have the product container or label with you when calling a poison control center or doctor, or going in for treatment. For emergency medical assistance call **NPCC 1-800-222-1222** or call **CHEMTREC 1-800-424-9300**.

### **5. FIRE FIGHTING MEASURES**

**GENERAL HAZARD:** Combustible liquid. This product will burn under fire conditions. Toxic fumes may also be emitted in a fire situation.

**EXTINGUISHING MEDIA:** Dry Chemical, CO<sub>2</sub>, Water Spray, or Foam. For large fires DO NOT use straight streams.

**EXPLOSION HAZARDS:** Combustible Liquid. Can form explosive mixtures at temperatures at or above the flashpoint. Can burn in fire, releasing irritating and toxic gases due to thermal decomposition or combustion.

**FIRE FIGHTING PROCEDURES:** Evacuate area and fight fire upwind a safe distance to avoid hazardous vapors and decomposition products. Fire exposed containers can build up pressure and should be kept cool with water spray if possible. Explosive vapor could form from ruptured containers. Dike and collect water used to fight fire to prevent environmental damage due to runoff. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

**FIRE FIGHTING EQUIPMENT:** As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

### **6. ACCIDENTAL RELEASE MEASURES**

**SMALL SPILL:** Pick up spilled liquid with absorbent material and sweep up for disposal. Place it and damaged unusable containers in a landfill appropriate for non hazardous chemical waste. Check local, state, and federal regulations for proper disposal.

**LARGE SPILL:** Immediately dike around the spill area to prevent spreading. Pick up spilled material with suitable absorbent material and place in appropriate container for disposal. Place it and unusable containers in a landfill appropriate for non hazardous chemical waste. Check local, state, and federal regulations for proper disposal.

#### **ENVIRONMENTAL PRECAUTIONS**

**WATER SPILL:** Do not contaminate any body of water.

**LAND SPILL:** Avoid runoff onto any adjacent land.

**SPECIAL PROTECTIVE EQUIPMENT:** Always wear proper protective equipment when handling this product.

## 7. HANDLING AND STORAGE

**HANDLING:** Wash hands after handling, before eating, drinking, chewing gum, using tobacco, or using the toilet. Avoid contact with eyes and contact with skin. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**STORAGE:** Storage should be under lock and key in a ventilated room and secure from access by unauthorized persons and children. Storage should be in a cool, dry area away from any heat or ignition source and away from children and animals. Mix well before using. Keep tightly closed. Do not contaminate water, foodstuffs, feed or seed by storage or disposal.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)							
				EXPOSURE LIMITS			
				ACGIH TLV		Supplier OEL	
Chemical Name				ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Abamectin				TWA		0.04	
Butylated hydroxytoluene				TWA	2 IV		

**ENGINEERING CONTROLS:** When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** Wear chemical goggles or shielded safety glasses (ANSI Z87.1 or approved equivalent) when handling and mixing product. Contact lenses should not be worn when working with chemicals.

**SKIN:** Wear chemical resistant gloves such as Viton or barrier laminate, Coveralls over long-sleeved shirt, long pants and chemical resistant footwear plus socks. Chemical resistant headgear for overhead exposure. When exposed to product concentrate, wear a chemical resistant apron. Always refer to the label of the pesticide(s) in the tank mix and follow the most restrictive requirements.

**RESPIRATORY:** Proper ventilation is required when handling or using this product to keep exposure to airborne contaminants below the exposure limit. Wear a NIOSH/MSHA approved dust mask or filter when vapors are expected to be generated above the permissible limit.

**PROTECTIVE CLOTHING:** Eye protection, long sleeved shirt and long pants, shoes plus socks and chemical resistant gloves. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

**OTHER USE PRECAUTIONS:** Avoid contact with skin, eyes, and clothing. Avoid breathing vapors. Wash thoroughly after handling product. Eye wash fountains and drench showers should be located within 100 feet or a 10 second walk from the work area per ANSI Z358.1-1990

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**ODOR:** Bland

**APPEARANCE:** Liquid

**COLOR:** Amber

**pH:** ~ 4.0 to 5.0

**PERCENT VOLATILE:** Not Established

**FLASH POINT AND METHOD:** (176.4°F)

**FLAMMABLE LIMITS:** to Not Established

**AUTOIGNITION TEMPERATURE:** Not Established

**VAPOR PRESSURE:** Not Established

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**VAPOR DENSITY:** Not Established  
**BOILING POINT:** Not Established  
**FREEZING POINT:** Not Established  
**MELTING POINT:** Not Established  
**POUR POINT:** Not Established  
**THERMAL DECOMPOSITION:** Not Established  
**SOLUBILITY IN WATER:** Emulsifies  
**EVAPORATION RATE:** Not Established  
**DENSITY:** 8.6 - 8.8 lbs/gal.  
**SPECIFIC GRAVITY:** 1.03 to 1.05 g/mL  
**VISCOSITY #1:** ~ 16 Centistokes  
**MOLECULAR WEIGHT:** Not Established

## 10. STABILITY AND REACTIVITY

**STABLE:** Yes  
**HAZARDOUS POLYMERIZATION:** No  
**POLYMERIZATION:** Will not occur.  
**CONDITIONS TO AVOID:** Heat, open flame, sparks and static electricity.  
**INCOMPATIBLE MATERIALS:** None known.

## 11. TOXICOLOGICAL INFORMATION

### ACUTE

**DERMAL LD<sub>50</sub>:** > 5000 mg/kg

**ORAL LD<sub>50</sub>:** 310.2 mg/kg

**INHALATION LC<sub>50</sub>:** > 2.09 mg/L

**EYE EFFECTS:** Causes serious eye irritation.

**SKIN EFFECTS:** Causes mild skin irritation.

### CARCINOGENICITY

Chemical Name	IARC Status
Butylated hydroxytoluene	3

**COMMENTS:** These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

## 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL DATA:** This pesticide is toxic to fish and wildlife. DO NOT apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. DO NOT apply when weather conditions favor drift from target areas. DO NOT contaminate water when disposing of equipment washwater or rinsate. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. DO NOT apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

Use of this product may pose a risk to threatened and endangered species of fish, amphibians, crustaceans (including fresh water shrimp), and insects. All use of this product in the state of California should comply with the recommendations of the California Endangered Species Project. Before using this product in California, consult with your county agriculture commissioner to determine use limitations that apply in your area. This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a medium potential for reaching both surface water and aquatic sediment via runoff for several weeks to months after application. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds,

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streams, and springs will reduce the potential loading of abamectin from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecast to occur within 48 hours.

**AQUATIC TOXICITY (ACUTE)**

**96-HOUR LC<sub>50</sub>:** 3.6 ppb (Rainbow Trout)

**CHEMICAL FATE INFORMATION:** Abamectin is nearly insoluble in water and has a strong tendency to bind to soil particles. Abamectin is rapidly degraded by photolysis in both the soil and water. The average half-life in soil is 5-10 hours and in water 18 hours. Hydrolysis is not an important degradation mechanism.

**13. DISPOSAL CONSIDERATIONS**

**DISPOSAL METHOD:** Do not reuse product containers. Triple rinse (or equivalent), then offer for recycling at an ACRC site (go to <http://www.acrecycle.org/> for locations) or by reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by local, state, and federal regulations.

**14. TRANSPORT INFORMATION****DOT (DEPARTMENT OF TRANSPORTATION)**

**PROPER SHIPPING NAME:** UN 2902, Pesticides, Liquid, Toxic, n.o.s. (Abamectin), 6.1, PG III, ERG GUIDE 151

UN 2902, Pesticides, Liquid, Toxic, n.o.s. (Abamectin), 6.1, PG III, ERG GUIDE 151, Marine Pollutant

**15. REGULATORY INFORMATION****UNITED STATES****SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

**311/312 HAZARD CATEGORIES:** Acute, Chronic, Fire

**FIRE:** Yes **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** Yes

**EPCRA SECTION 313 SUPPLIER NOTIFICATION**

Chemical Name	Wt.%	CAS
Abamectin	2	71751-41-2
1-methyl-2-pyrrolidone	21 - 22	872-50-4

**TSCA (TOXIC SUBSTANCE CONTROL ACT)**

Chemical Name	CAS
1-methyl-2-pyrrolidone	872-50-4
Butylated hydroxytoluene	128-37-0
Ethyl lactate	687-47-8

**CALIFORNIA PROPOSITION 65**

Chemical Name	Wt.%	Listed
Abamectin	2	● Developmental Toxicity
1-methyl-2-pyrrolidone	21 - 22	● Cancer ● Developmental Toxicity

**FIFRA (FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT):****Labeling Information:**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**PRECAUTIONARY STATEMENTS****Hazards to Humans and Domestic Animals**

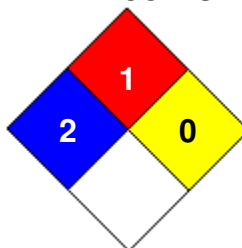
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**WARNING/AVISO**

May be fatal if swallowed. Causes substantial but temporary eye injury. Wear protective eyewear (goggles or face shield). DO NOT get in eyes, on skin, or on clothing. Harmful if inhaled or absorbed through the skin. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

**16. OTHER INFORMATION**

**REASON FOR ISSUE:** New SDS Format

**NFPA CODES****GENERAL STATEMENTS: DISCLAIMER AND LIMITATION OF LIABILITY**

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