

# Abamectin -MATERIAL SAFETY DATA SHEET

## Manufacturer/information service:

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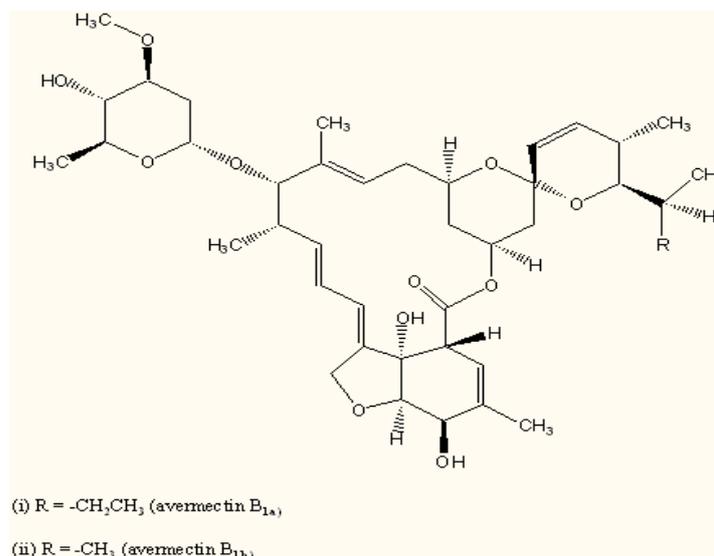
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## 1. Chemical Product Identification

Product Name: Abamectin

Molecular Formula:



Molecular Weight: 873.11

Chemical Name:

mixture of

(10*E*,14*E*,16*E*,22*Z*)-(1*R*,4*S*,5'*S*,6*S*,6'*R*,8*R*,12*S*,13*S*,20*R*,21*R*,24*S*)-6'-[(*S*)-*sec*-butyl]-21,24-dihydroxy-5',11,13,22-tetramethyl-2-oxo-(3,7,19-trioxatetracyclo[15.6.1.1<sup>4,8</sup>.0<sup>20,24</sup>])pentacos

a-10,14,16,22-tetraene)-6-spiro-2'-(5',6'-dihydro-2'*H*-pyran)-12-yl  
2,6-dideoxy-4-*O*-(2,6-dideoxy-3-*O*-methyl- $\alpha$ -L-*arabino*-hexopyranosyl)-3-*O*-methyl- $\alpha$ -L-*arabino*-hexopyranoside and

(10*E*,14*E*,16*E*,22*Z*)-(1*R*,4*S*,5'*S*,6*S*,6'*R*,8*R*,12*S*,13*S*,20*R*,21*R*,24*S*)-21,22-dihydroxy-6'-isopropyl-5',11,13,22-tetramethyl-2-oxo-(3,7,19-trioxatetracyclo[15.6.1.1<sup>4,8</sup>.0<sup>20,24</sup>])pentacos

a-10,14,16,22-tetraene)-6-spiro-2'-(5',6'-dihydro-2'*H*-pyran)-12-yl  
2,6-dideoxy-4-*O*-(2,6-dideoxy-3-*O*-methyl- $\alpha$ -L-*arabino*-hexopyranosyl)-3-*O*-methyl- $\alpha$ -L-*arabino*-hexopyranoside

Form: powder

Color: colorless to yellowish

Odor: odorless

CAS No.: 71751-41-2

## 2. Composition / Information On Ingredients

Composition	CAS No.	Content %
Abamectin	71751-41-2	97.0
others		3.0

## 3. Hazards Identification

More important danger for the man: none

Dangers for the environment: high toxic to fish and bees

Physical-chemical dangers: none

## 4. First Aid Measures

Skin: wash thoroughly with soap and water.

Eyes: flush with plenty of water for at least 15 minutes.

Inhalation: move to fresh air.

Ingestion: Drink one or two glasses of water and induce vomiting by touching the back of the throat with finger. Repeat until vomit fluid is clear.

## 5. Fire-Fighting Measures

Extinguishing media

To be used: Water, sand, foam, carbon dioxide, dry powder

Don't use: not applicable

Particular risk: not applicable

Measures of personal protection: safety glasses or goggles, rubber gloves, shoes plus socks, long-sleeved shirt, and long pants.

## 6. Accidental Release Measures

Personal cautions: Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.

Cleaning methods

EX: Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Environmental cautions

EX: prevent the contamination of the floor and of beds of water.

## 7. Handling And Storage

Handling: do not apply to humans, their clothing, or bedding. Do not contaminate food or use on household tanks.

Storage: Store in a cool, dry place.

## 8. Exposure Controls / Personal Protection

Personal protective equipment

Respiratory protection: approved respirator

Protective gloves: rubber gloves

Eye protection: goggles

Industrial hygiene: not applicable

## 9. Physical And Chemical Properties

Melting point: 150-155°C

Relative Density: 1.16 at 20°C

Bulk density: Not applicable

Water solubility: 1.21mg/l at 20°C

Other solubilities: vs. in acetone, toluene, ethyl acetate, octanol

PH value: 5-8

Flash point: not applicable

Ignition temperature: not applicable

## 10. Stability And Reactivity

**Stability:** Stable to hydrolysis in aqueous solutions at Ph 5, 7, and 9(25°C). Sensitive to stronger acid and base. U.V. irradiation causes conversion first to the 8, 9-Z-isomer, then to unidentified decomposition products.

**Incompatibility:** Not compatible with captan.

**Hazardous decomposition:** Toxic materials are formed during exposure to high temperatures (may include but not limited to carbon monoxide, and carbon dioxide).

## 11. Toxicological Information

### Acute toxicity:

Acute oral LD<sub>50</sub> for rats: 10mg/kg

Acute dermal LD<sub>50</sub> for rats: >2000mg/kg

Acute inhalation LD<sub>50</sub> for rats: 5000mg/kg

Abamectin is highly toxic to insects and may be highly toxic to mammals as well. Emulsifiable concentrate formulations may cause slight to moderate eye irritation and mild skin irritation. Symptoms of poisoning observed in laboratory animals include pupil dilation, vomiting, convulsions and/or tremors, and coma. Abamectin acts on insects by interfering with the nervous system. At very high doses, it can affect mammals, causing symptoms of nervous system depression such as incoordination, tremors, lethargy, excitation, and pupil dilation. Very high doses have caused death from respiratory failure. Abamectin is not readily absorbed through skin. Tests with monkeys show that less than 1% of dermally applied abamectin was absorbed into the bloodstream through the skin. Abamectin does not cause allergic skin reactions. The oral LD<sub>50</sub> for abamectin in rats is 10 mg/kg, and in mice ranges from 14 mg/kg to greater than 80 mg/kg. The oral LD<sub>50</sub> for the product Avid EC in rats is 650 mg/kg. The dermal LD<sub>50</sub> for technical abamectin in rats and rabbits is greater than 330 mg/kg.

### Reproductive effects:

Rats given 0.40 mg/kg/day of abamectin had increased stillbirths, decreased pup viability, decreased lactation, and decreased pup weights. These data suggest that abamectin may have the potential to cause reproductive effects at high enough doses.

### Teratogenic effects:

Abamectin produced cleft palate in the offspring of treated mice and rabbits, but only at doses that were also toxic to the mothers. There were no birth defects in the offspring of rats given up to 1 mg/kg/day. Abamectin is unlikely to cause teratogenic effects except at doses toxic to the mother.

### Mutagenic effects:

Abamectin does not appear to be mutagenic. Mutagenicity tests in live rats and mice were negative. Abamectin was shown to be nonmutagenic in the Ames test.

### Carcinogenic effects:

Abamectin is not carcinogenic in rats or mice. The rats were fed dietary doses of up to 2 mg/kg/day for 24 months, and the mice were up to 8 mg/kg/day for 22 months. These represent the maximum tolerated doses.

### Organ toxicity:

Animal studies indicate that abamectin may affect the nervous system.

Other data: not applicable

## 12. Ecological And Ecotoxicological Information

**Aquatic toxicity:**

LC50 for trout: 0.0036ppm

LC50 for bluegill: 0.0096ppm

LC50 for water flea: 0.00037ppm

**Terrestrial toxicity:**

LC50 (8d) dietary for bobwhite quail: 3102ppm

LC50 (8d) dietary for bobwhite quail: 383ppm

LC50 for bees: 0.002µg/bee

**Environment fate:** Binds tightly to soil, with rapid degradation by soil micro-organisms. No bioaccumulation.

**13. Disposal Considerations**

**Product disposal:** contaminate absorbents, used containers, surplus product, should be burnt at >1000°C in an incinerator, preferably designed for pesticide disposal, or buried in an approved landfill. Small quantities can be spray onto crops. Hydrolysis using caustic solution is a suitable method to dispose of small quantities of the product. After hydrolysis, dilute and dispose of in pits or landfill. Comply with local legislation applying to waste disposal.

**Container disposal:** Emptied containers retain product residues. Do not reuse product containers. Observe all labeled safeguards until container is cleaned, reconditioned, or destroyed. Combustible containers should be disposed of in pesticide incinerators or buried in an approved landfill. Non-combustible containers must first be triple-rinsed with water. Container that are not to be used should be punctured and transported to scrap metal facility for recycling or disposal.

**14. Transport Information**

Not applicable.

**15. Regulatory Information**

Not applicable.

**16. Other Information**

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read

and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produce formulations containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.