

Sucrose Octanoate Esters (035300) Fact Sheet & Sorbitol Octanoate (035400)

Summary

Sucrose octanoate esters and sorbitol octanoate are structurally similar and exert similar actions on biological systems. Both substances are intended to control mites and certain soft-bodied insect pests (e.g., aphids, caterpillars, glassy-winged sharpshooters) on food and non-food crops. Sucrose octanoate esters are also used for a) controlling certain flies in media used for growing mushrooms, and b) controlling *Varroa* mites on adult honey bees. Both active ingredients degrade to harmless substances in the environment. Sucrose octanoate was approved as an active ingredient in September 2002; sorbitol octanoate was approved in January 2006. Workers are required to use eye protection to prevent permanent damage and/or severe irritation. Otherwise, no harmful effects to humans or the environment are expected from use of these octanoate esters in pesticide products when users follow label directions.

I. Description of the Active Ingredient

Sucrose octanoate esters and sorbitol octanoate are amber-colored liquids with comparable biological properties. Both decompose in the environment to similar harmless substances, and both act by disrupting the waxy outer layer (cuticle) of mites and various soft-bodied insects, causing the insect or mite to dry out and die. Susceptible pests include mites, aphids, caterpillars and glassy-winged sharpshooters. Sucrose octanoate esters occur naturally in plants, whereas sorbitol octanoate is not known to exist in nature. The pesticidal properties were discovered when researchers investigated the reason tobacco leaves were not attacked by mites and certain insect pests. (CAS Nos. 42922-74-7, 58064-47-4, and 108175-15-1)

II. Use Sites, Target Pests, and Application Methods

○ Target Pests and Use Sites:

Sucrose Octanoate Esters

1. Mites and soft-bodied insects on food and non-food crops, including certain ornamentals.
2. Immature forms of certain species of gnats found in media used for growing mushrooms. Whether a substance poses a risk to humans or other organisms depends on two factors: how toxic the substance is, and how much of it an organism is exposed to. Therefore, the EPA considers toxicity data and exposure data in deciding whether to approve a pesticide for use.
3. *Varroa* mites on adult honey bees.

Sorbitol Octanoate

Mites and soft-bodied insects on all agricultural/horticultural commodities in fields, nurseries, and greenhouses.

- **Application Method:** Spray with ground equipment.

III. Assessing Risks to Human Health

Except through ocular exposure, no risks to humans are expected from the use of these octanoate esters as pesticide active ingredients. The esters are not toxic to mammals, and decompose to harmless natural substances. In high concentrations, these esters are either corrosive or severely irritating to the eye. To avoid irreversible eye damage and/or severe eye irritation, workers are required to wear appropriate protective clothing, including protective eye wear (goggles or face shield).

IV. Assessing Risks to the Environment

No risks to the environment are expected from the label uses of sucrose octanoate esters or sorbitol octanoate in pesticide products. The esters act only by direct physical contact with mites and soft bodied insects; the substances are not toxic or otherwise harmful to mammals or other non-target organisms. The esters biodegrade rapidly to harmless substances. For the sucrose octanoates, organisms are already exposed because these substances occur naturally, and the tiny amounts used in pesticide products does not substantially increase environmental levels. Although sorbitol octanoate is not known to occur naturally, it is made from, and rapidly breaks down to, naturally-occurring harmless substances.

V. Regulatory Information

Sucrose Octanoate esters

Year initially registered as an active ingredient: September, 2002

Number of end-use products (September, 2002): 1

End-use product name: Avachem Sucrose Octanoate [40.0%] (EPA Reg # 70950-2)

Sorbitol Octanoate

Year initially registered as an active ingredient: January 17,, 2006

End-use product name: Avachem Sorbitol Octanoate [90.0%] (EPA Reg # 70950-3)

VI. Registrant Information

AVA Chemical Ventures, L.L.C.
80 Rochester Avenue Suite 214
Portsmouth, NH 03801
(603) 431-4242

VII. Additional Contact Information

[Ombudsman, Biopesticides and Pollution Prevention Division](#) (7511P)
Office of Pesticide Programs
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460