

# 4-allyl anisole (Estragole) (062150) Fact Sheet

## Summary

4-allyl anisole is intended for use in pesticide products that protect conifers in forests, parks, and recreation areas from bark beetles, including the southern pine beetle (*Dendroctonus frontalis*), that feed, mate, and reproduce on trees. The naturally occurring chemical acts as a beetle repellent/anti-aggregant. When small amounts of 4-allyl anisole are applied to trees, beetles are prevented from aggregating and from large scale reproduction. No harm to people or the environment is expected from use of pesticide products containing 4-allyl anisole.

## I. Description of the Active Ingredient

Active Ingredient Name: 4-allyl anisole (Estragole)

OPP Chemical Code: 062150; (CAS # 140-67-0)

Pure 4-allyl anisole is a volatile colorless liquid with an odor similar to that of anise. It is present in large amounts in herbs such as basil, fennel, and tarragon, and is also made by conifer trees (evergreen trees) when they are infested with bark beetles.

Bark beetles are typically attracted to conifers that have been damaged by disease or environmental conditions such as drought or lightning. Scientists have discovered that certain trees, because of disease or other reasons, release volatile chemicals that insects use to identify good sources of food and shelter. The first beetles to arrive at the injured tree produce and release a variety of additional compounds that attract more beetles. As the insects gather on diseased trees in large numbers, they are stimulated to reproduce. When many beetles have assembled, the tree starts making large amounts of 4-allyl anisole. Scientists do not know why infested trees make this volatile chemical, but they suggest that the 4-allyl anisole may repel additional beetles by signaling that too many are already present and competing for food, or may attract other organisms, such as parasites, that may attack and kill the beetles.

## II. Use Sites, Target Pests, and Application Methods

- **Use sites:** End use products will be used in forests, parks, and recreational and residential areas.
- **Target pest:** Bark beetles, such as the southern pine beetle (*Dendroctonus frontalis*)

- **Application Methods:** Because no end products were approved as of 10/01, application methods were not available.

### **III. Assessing Risks to Human Health**

Use of 4-allyl anisole in pesticide end products is not expected to harm humans. Toxicity tests show that 4-allyl anisole has low to no toxicity. Exposure to humans should be minimal, given that the end products are likely to be placed out of reach in trees.

### **IV. Assessing Risks to the Environment**

Adverse effects of 4-allyl anisole on nontarget organisms (e.g., mammals, birds, aquatic organisms, beneficial insects) are not expected because

1. There is minimal to no toxicity to non-target terrestrial and aquatic organisms.
2. The active ingredient is relatively specific for bark beetles in conifers.
3. Only tiny amounts of 4-allyl anisole will be released to the air.

### **V. Regulatory Information**

As of 10/01, there was one manufacturing product ("Beetleball Technical") that contains 98% of 4-allyl anisole. "Beetleball Technical" can be used only for making end use products, each of which will need to be separately registered (approved for distribution and sale).

### **VI. Registrant**

**Taensa, Inc.**  
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Fairfield, CT 06430

### **VII. Additional Contact Information**

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