

Gamma aminobutyric acid (GABA) & L-Glutamic acid (030802, 374350) Fact Sheet

Summary

These two active ingredients are used to enhance growth of specified plants, prevent development of powdery mildew on grapes, and suppress certain other plant diseases. L-Glutamic acid is one of the major amino acids naturally found in plant and animal proteins, and GABA helps to maintain normal brain function. Humans and animals normally ingest and metabolize these substances in variable amounts, and no adverse effects are expected from the amounts that would be used in pesticide products.

I. Description of the Active Ingredient

L-Glutamic acid and gamma aminobutyric acid (GABA) are found in virtually all living organisms. In their pure form, they are powders. L-Glutamic acid is one of the major amino acids in plant and animal proteins, and is also involved in many physiologic functions. Both active ingredients act as neurotransmitters in the brain. Humans readily metabolize ingested L-glutamic acid so that concentrations in the body remain constant. Enzymes in animals and plants convert L-glutamic acid to GABA.

II. Use Sites, Target Pests, and Application Methods

- **Use Sites:** Certain fruits and vegetables, tree nuts, peanuts, grains, animal feed crops, lawn and turfgrasses, and ornamentals.
- **Uses:** Growth enhancer to increase both yield and quality; Prevents powdery mildew on grapes, and suppresses certain other crop diseases
- **Application Methods:** Pesticide products with these active ingredients can be applied by spraying from the ground or the air, by drenching the soil, or through certain irrigation systems. To prevent powdery mildew, the pesticide product must be applied before the disease develops.

III. Assessing Risks to Human Health

No risks to human health are expected from use of L-glutamic acid and GABA as pesticide active ingredients. Both substances occur naturally in plants and animals. Humans normally ingest large and variable amounts of L-glutamic acid, but rapidly metabolize it so that plasma levels remain constant. The Food and Drug Administration (FDA) classifies L-glutamic acid as GRAS (generally recognized as safe for human consumption). Toxicity tests in animals and humans showed no adverse effects from GABA or L-glutamic acid.

IV. Assessing Risks to the Environment

No risks to the environment are expected from use of these active ingredients because 1) they occur naturally and do not persist in the environment, 2) they are not toxic to mammals or other organisms tested, and 3) they are not likely to be toxic to plants, given that they enhance growth of many kinds of plants. Products with these active ingredients are not approved for application directly to water or to areas where surface water is present.

V. Regulatory Information

L-Glutamic acid and GABA were registered (licensed for sale) as growth enhancing pesticidal active ingredients in January 1998. In 2001, EPA expanded the tolerance exemptions to include all uses "when applied/used in accordance with good agricultural practices." The Truth in Labeling Campaign objected to this expansion and EPA denied their Objection in 2004. As of October 2004, there were two registered end use products with these active ingredients.

VI. Registrant Contact Information

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VII. Additional Contact Information

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