



R.E.D. FACTS

Citric Acid

Pesticide Reregistration

All pesticides sold or used in the United States must be registered by EPA, based on scientific studies showing that they can be used without posing unreasonable risks to people or the environment. Because of advances in scientific knowledge, the law requires that pesticides which were first registered years ago be reregistered to ensure that they meet today's more stringent standards.

In evaluating pesticides for reregistration, EPA obtains and reviews a complete set of studies from pesticide producers, showing the human health and environmental effects of each pesticide. The Agency imposes any regulatory controls that are needed to effectively manage each pesticide's risks. EPA then reregisters pesticides that can be used without posing undue hazards to human health or the environment.

When a pesticide is eligible for reregistration, EPA announces this and explains why in a Reregistration Eligibility Document, or RED. This fact sheet summarizes the information in the RED for citric acid.

Use Profile

Citric acid is an active ingredient in pesticide products registered for residential and commercial use as disinfectants, sanitizers and fungicides. These products, containing citric acid in combination with other active ingredients, are used to kill odor-causing bacteria, mildew, pathogenic fungi, certain bacteria and some viruses; and to remove dirt, soap scum, rust, slime and calcium deposits. Citric acid products are used in bathrooms, and in/on dairy and food processing equipment.

Citric acid occurs naturally in plants and in animal tissues and fluids. It can be extracted from citrus fruit and pineapple waste. It can be produced on an industrial scale by mold-based fermentation of carbohydrates such as molasses.

Regulatory History

The first pesticide products containing citric acid as an active ingredient were registered in the early 1970's. Currently, three products containing citric acid and other active ingredients are registered for use as fungicides and bactericides, as described above. Citric acid is "generally recognized as safe," or GRAS (see 21 CFR 182.1033).

Human Health and Environmental Assessment

Although EPA has developed a set of data requirements for reregistration, the Agency believes there is a category of pesticides for which a greatly reduced set of data requirements are appropriate. Such pesticides may be exempt from the usual generic data requirements for toxicology, residue chemistry, human exposure, ecological effects and environmental fate, without compromising human health or environmental safety. However, some data requirements (such as product specific product chemistry data, acute toxicology studies and efficacy studies) usually are essential, and generally will not be waived.

Citric acid is in this category of pesticides, and EPA is waiving most of the generic data requirements for its reregistration. Citric acid is a well known component of carbohydrate metabolism in living organisms, and is found naturally in soil and water. It degrades readily when in contact with a variety of microorganisms that are found in soil, natural waters and sewage treatment systems.

The current registered pesticidal uses of citric acid result in only negligible human and environmental exposure. EPA has received no reports of adverse effects resulting from citric acid's use. Citric acid, however, is a severe eye irritant and a moderate skin irritant, so appropriate label precautions are necessary. The Agency believes that no significant adverse effects to humans or the environment are associated with the proper use of citric acid as a pesticide.

Additional Data Required

EPA has waived all additional generic data requirements for citric acid.

Product Labeling Changes Required

The labels of the three registered citric acid pesticide products must comply with EPA's current pesticide labeling requirements.

Regulatory Conclusion

- The registered disinfectant, sanitizer and fungicide uses of citric acid are not likely to cause unreasonable adverse effects in people or the environment, and are eligible for reregistration.
- These products, which contain both citric acid and other active ingredients, will be reregistered once product-specific data and amended labeling are received and accepted by EPA, and after the other active ingredients also are determined to be eligible for reregistration.

For More Information

EPA is requesting public comments on the Reregistration Eligibility Document (RED) for citric acid during a 60-day time period, as announced in a Notice of Availability published in the Federal Register. To obtain a copy of the RED or to submit written comments, please contact the Public Response and Program Resources Branch, Field Operations Division (7506C), Office of Pesticide Programs (OPP), US EPA, Washington, DC 20460, telephone 703-305-5805.

In the future, the citric acid RED will be available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161, telephone 703-487-4650.

For more information about citric acid or about EPA's pesticide reregistration program, please contact the Special Review and Reregistration Division (7508W), OPP, US EPA, Washington, DC 20460, telephone 703-308-8000. For information about reregistration of individual citric acid products, please contact the Registration Division (7505C), OPP, US EPA, Washington, DC 20460, telephone 703-305-5447.

For information about the health effects of pesticides, or for assistance in recognizing and managing pesticide poisoning symptoms, please contact the National Pesticides Telecommunications Network (NPTN). Call toll-free 1-800-858-7378, 24 hours a day, seven days a week, or Fax your inquiry to 806-743-3094.