



R.E.D. FACTS

Pesticide Reregistration

Oxythioquinox

All pesticides sold or distributed 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 before November 1, 1984, 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, describing the human health and environmental effects of each pesticide. To implement provisions of the Food Quality Protection Act of 1996, EPA considers the special sensitivity of infants and children to pesticides, as well as aggregate exposure of the public to pesticide residues from all sources, and the cumulative effects of pesticides and other compounds with common mechanisms of toxicity. The Agency develops any mitigation measures or regulatory controls needed to effectively reduce each pesticide's risks. EPA then reregisters pesticides that meet the safety standard of the FQPA and can be used without posing unreasonable risks to human health or the environment.

When a pesticide is eligible for reregistration, EPA explains the basis for its decision in a Reregistration Eligibility Decision (RED) document. This fact sheet summarizes the decision for reregistration case 2495, oxythioquinox, which consists of a voluntary cancellation.

Description of Chemical

Common Name: Oxythioquinox, Chinomethionate
Chemical Formula: 6-methyl-1,3-dithiolo(4,5-b)quinoxalin-2-one
Trade Name: Morestan
Chemical Code: 054101
C.A.S. Number: 2439-01-2
Pesticide Type: Miticide, Fungicide, Insecticide
Chemical Class: Dithiocarbonate
Registrant: Bayer Corporation

Regulatory History

Oxythioquinox was first registered in the U.S. in 1968 as an insecticide, miticide and fungicide used to control mites, mite eggs, and powdery mildew.

Previously, most products were emulsifiable concentrates that were applied either through low volume concentrated spray from aircraft, or high volume diluted spray from ground equipment to a variety of agricultural and ornamental crops. Active products now are confined only to use on non-food crops such as landscape ornamentals, and in such places as nurseries and greenhouses. Oxythioquinox is applied by conventional hand or machine operated sprayers.

On October 17, 1996, Bayer, the sole registrant, requested voluntary cancellation of all oxythioquinox food uses except citrus. Bayer submitted data to support the continued reregistration of Morestan 25WP (3125-117) and Morestan Solupak 25WP (3125-302) on citrus. They also requested cancellation of their remaining FIFRA section 24(c), state special local needs registrations.

Subsequently, on May 30, 1997, Bayer requested the cancellation of the remaining food-use products, (3125-117) and (3125-302). These cancellations became final March 9, 1998. The existing stocks period, which ran for 18 months, began when the Agency received the request for cancellation on June 4, 1997. Only the technical product (3125-205) and two-non-food use products, Morestan 4 Ornamental Miticide (3125-381) and Morestan 4 Nursery Miticide (3125-437), remained active.

On February 1, 1999, Bayer requested voluntary cancellation of all the remaining Morestan products, contingent upon an 18-month existing stock provision which would allow them to deplete their remaining product inventory. EPA published a notice of receipt of Bayer's request for voluntary termination of oxythioquinox registrations in the Federal Register on March 17, 1999. The cancellation notice was published September 17, 1999. Per Bayer's request, the registrant will be allowed to sell and distribute existing stocks of these products for eighteen months after the effective date of cancellation, or until March 17, 2001. End-users will be allowed an additional year, until September 17, 2001 (for a total of 2 years beyond the registrant's requested date), for the use of existing stocks.

Human Health Assessment

Toxicity

In four of seven acute toxicity studies conducted, oxythioquinox was classified as Toxicity Category III or IV. In the primary eye irritation study, it was classified as Toxicity Category II. Oxythioquinox can cause irreversible eye damage. Also, some bystanders may experience a skin reaction similar to sun burn (UV light), particularly if wind is present during applications.

EPA has also concluded that oxythioquinox should be classified as a Group B2 (probable human) carcinogen based on statistically significant increases in lung tumors in male NMRI mice, heptaocellular tumors in both sexes of the F344 rat, and rare kidney tumors in female F344 rats. However, EPA did not complete risk estimates for oxythioquinox since it is being taken off the market.

Dietary Exposure

There are no food uses associated with oxythioquinox. Bayer corporation voluntarily cancelled all food uses in 1996 and 1997. Sale and distribution of the last food use products were allowed by registrants until December 4, 1998. Tolerances for the canceled food uses will be proposed for revocation in the near future.

Occupational and Residential Exposure

Oxythioquinox was used by nursery and landscape professionals and is not sold to homeowners. Occupational, handlers (mixers, loaders, and applicators) may be exposed to oxythioquinox during and after normal applications in greenhouses and outdoor settings.

Environmental Assessment

Environmental Fate

EPA did not complete an environmental fate assessment for oxythioquinox. Several data requirements are still outstanding.

Ecological Effects

Oxythioquinox is moderately toxic to birds and adversely affected egg production, embryo survival (and perhaps fertility), hatch ability, offspring body weight and survival of offspring in avian reproduction studies. Oxythioquinox is also highly toxic to fish and other aquatic organisms.

For More Information

Electronic copies of this RED fact sheet and others are available on the Internet. See <http://www.epa.gov/REDs>.

For more information about EPA's pesticide reregistration program or about oxythioquinox, please contact Jamil Mixon of the Special Review and Reregistration Division (7508C), OPP, US EPA, Washington, DC 20460, telephone 703-308-8032.

For information about the health effects of pesticides, or for assistance in recognizing and managing pesticide poisoning symptoms, please contact the National Pesticide Telecommunications Network (NPTN). Call toll-free 1-800-858-7378, from 6:30 am to 4:30 pm Pacific Time, or 9:30 am to 7:30 pm Eastern Standard Time, seven days a week. Their internet address is www.ace.orst.edu/info/nptn.