



R.E.D. FACTS

Hydroxyethyl Octyl Sulfide

Pesticide Reregistration

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 Nov. 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. The Agency develops any mitigation measures or regulatory controls needed to effectively reduce each pesticide's risks. EPA then reregisters pesticides that 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 information in the RED document for reregistration case 3103, hydroxyethyl octyl sulfide.

Use Profile

Hydroxyethyl octyl sulfide is currently registered for use as an insect repellent for recreational areas, refuse/solid waste containers (garbage cans), on ornamental and/or shade trees, compost/compost piles, household/domestic dwellings, and pet living and sleeping areas. Formulations include an emulsifiable concentrate and a pressurized liquid. Hydroxyethyl octyl sulfide may be applied by aerosol can or ready-to-use fogger. Use practice limitations prohibit direct application to lakes, streams, ponds and wetlands.

Regulatory History

Hydroxyethyl octyl sulfide was first registered in the United States in 1962 for use as an insect repellent. A September 1992 Data Call-In (DCI) required additional chemistry, toxicology, and environmental data. Currently there are 26 pesticide products registered which contain hydroxyethyl octyl sulfide as an active ingredient.

Human Health Assessment

Toxicity

In laboratory animal studies measuring acute toxicity, technical grade hydroxyethyl octyl sulfide has been shown to be slightly toxic by the dermal route, placing it in Toxicity Category III for dermal toxicity. It has been shown to produce moderate to slight irritation in eye and dermal irritation studies, placing it in Toxicity Category II for eye irritation and Toxicity Category III for skin irritation. It is practically non-toxic in oral toxicity studies, placing it in Toxicity Category IV for oral toxicity. This chemical is not a skin sensitizer based on a study using guinea pigs.

Developmental toxicity studies using rats resulted in no maternal toxicity and no treatment-related fetal external or soft tissue abnormalities at any dose level. Hydroxyethyl octyl sulfide did not cause mutagenicity in four tests.

Dietary Exposure

Because there is no known dietary exposure to hydroxyethyl octyl sulfide, a dietary exposure assessment was not done. The Agency considers the uses of hydroxyethyl octyl sulfide to be non-food.

Occupational and Residential Exposure

EPA has determined that residential and occupational exposures to hydroxyethyl octyl sulfide do not warrant a risk assessment at this time. The Agency's decision was based on the current use patterns, the current label requirements along with language required in the RED document, and the absence of any toxicologically significant endpoints for hydroxyethyl octyl sulfide.

Environmental Assessment

Environmental Fate

Hydroxyethyl octyl sulfide and its sulfoxide and sulfone degradates are not likely to persist for any significant amount of time, having half-lives of <2 days in soil. Even though hydroxyethyl octyl sulfide residues are moderately mobile in soil and have a relatively high water solubility, ground and surface water contamination are not likely based on the lack of persistence in soil, the limited amount of use, and its outdoor use pattern. However, hydroxyethyl octyl sulfide may persist if it is applied directly to water.

Ecological Effects

Hydroxyethyl octyl sulfide is practically nontoxic to avian species on both an acute oral and a subacute dietary basis. It is unlikely that birds will ingest any residue on avian food items because hydroxyethyl octyl sulfide is quick to volatilize. In addition, based on the limited use pattern of

hydroxyethyl octyl sulfide products and the lack of persistence in aerobic soil of both the parent compound and metabolites, it is unlikely that birds will be exposed or adversely impacted. Hydroxyethyl octyl sulfide causes moderate to high toxicity in most aquatic organisms tested to date. However, it is neither persistent nor mobile in the environment. If hydroxyethyl octyl sulfide is used in accordance with existing label restrictions there is minimal potential for aquatic organisms to be adversely impacted through ground or surface water.

Additional Data Required

EPA is requiring product-specific data, including product chemistry and efficacy data, revised Confidential Statements of Formula (CSFs), and revised product labeling for reregistration of products containing hydroxyethyl octyl sulfide.

Product Labeling Changes Required

The labels of all registered pesticide products containing hydroxyethyl octyl sulfide must comply with EPA's current pesticide labeling requirements.

User Safety Recommendations- The labels of all hydroxyethyl octyl sulfide end-use products must contain the following statements:

"Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet."

"Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing."

"Do not apply this product in a way that will contact any unprotected person, either directly or through drift."

"Do not apply directly to water or wetlands, swamps, bogs, marshes and potholes, or areas where surface water is present or to intertidal areas below the mean high water mark. Keep out of lakes streams and ponds. Do not apply on food crops. Do not apply on household pets."

"The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas)."

Regulatory Conclusion

The use of currently registered pesticide products containing hydroxyethyl octyl sulfide as an active ingredient in accordance with approved labeling will not pose unreasonable risks or adverse effects to humans or the environment. Therefore, all uses of these products are eligible for reregistration.

These hydroxyethyl octyl sulfide products will be reregistered once the required product-specific data, revised Confidential Statements of Formula, and revised labeling are received and accepted by EPA.

For More Information

EPA is requesting public comments on the Reregistration Eligibility Decision (RED) document for hydroxyethyl octyl sulfide 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 Pesticide Docket, Public Response and Program Resources Branch, Field Operations Division (7506C), Office of Pesticide Programs (OPP), US EPA, Washington, DC 20460, telephone 703-305-5805.

Electronic copies of the RED and this fact sheet can be downloaded from the Pesticide Special Review and Reregistration Information System at 703-308-7224. They also are available on the Internet on EPA's gopher server, *GOPHER.EPA.GOV*, or using ftp on *FTP.EPA.GOV*, or using WWW (World Wide Web) on *WWW.EPA.GOV*.

Printed copies of the RED and fact sheet can be obtained from EPA's National Center for Environmental Publications and Information (EPA/NCEPI), PO Box 42419, Cincinnati, OH 45242-0419, telephone 513-489-8190, fax 513-489-8695.

Following the comment period, the hydroxyethyl octyl sulfide RED document also 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 EPA's pesticide reregistration program, the hydroxyethyl octyl sulfide RED, or reregistration of individual products containing hydroxyethyl octyl sulfide, please contact the Special Review and Reregistration Division (7508W), OPP, US EPA, Washington, DC 20460, telephone 703-308-8000.

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, between 9:30 am and 7:30 pm Central Time, Monday through Friday.