

US EPA ARCHIVE DOCUMENT

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MEMORANDUM

SUBJECT: **Ecological Effects Review For:**

Microfree T-558; ID 069897-G; Barcode D234550; Zinc Silicate (008103), Silver (072501), and Copper (II) Oxide (042401) and Summary of Issues Related To: Microfree B-240, Microfree B-507, and Microfree Z-200

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Introduction

Risk Management Branch 1 (RM1) requested the Risk Assessment and Science Support Branch (RASSE) to provide an **ecological effects summary** for toxicity data and issues related to four Microfree products. These products are:

Microfree B-240	069897-E	Silver (072501), cupric oxide (042401)
Microfree T-558	069897-G	Silver (072501), cupric oxide (042401), zinc silicate (008103)
Microfree B-507	069897-R	Silver (072501), zinc silicate (008103)
Microfree Z-200	069897-U	Silver (072501), zinc oxide (088502)

An analysis of the use patterns, data requirements, ecological effects data, and issues follows:

Proposed Uses of Microfree Products

The registrant has proposed registration of various use patterns, which RASSB considers to be indoor use patterns (relative to the ecological effects review). For these types of use patterns RASSB uses the ecological effects toxicity data for determining baseline toxicity and precautionary labeling; RASSB does not perform a risk characterization for such use patterns. The use patterns proposed are for commercial application (incorporation) of Microfree products into the following types of materials:

Non-food use plastics: Plastic film and molded plastic for use in the manufacture of shower curtains, protective covers, and gaskets.

Adhesives: Adhesives used as sealants for plywood, cement tile, and building materials.

Synthetic fibers: Fibers such as nylon and Dacron cloth fibers for use in the manufacture of carpets and clothing (Lycra).

Paint coatings: Vinyl, water, and solvent-based paints.

Generic (Ecological Effects) Data Requirements For Antimicrobial Indoor Use Products

The following data are typically required to support antimicrobial indoor uses such as those listed above for Microfree products:

- 71-1(a): Avian acute oral LD₅₀ with bobwhite quail (preferred) or mallard duck;
- 71-2: Avian dietary LC₅₀ with bobwhite quail (preferred) or mallard duck;
- 72-1: Fish acute LC₅₀ with rainbow trout (preferred) or bluegill sunfish;
- 72-2(a): Aquatic invertebrate LC₅₀/EC₅₀ using *Daphnia magna*.

These studies typically are performed on the technical grade of each active ingredient (TGAI). However, studies performed with Typical End-Use Products (TEPs) can be used to support products with the same, or substantially similar, ingredients at percentages equal to, or less than, those tested.

Microfree B-240; 069897-E; Barcode D228248

The Ecological Effects Branch (EEB) of the Environmental Fate and Effects Division (EFED) previously reviewed ecotoxicity data submitted under barcode D228248 containing MRIDs 440140-07, 440140-08, and 440140-09; rainbow trout 96-hour LC₅₀, *Daphnia magna* 48-hour EC₅₀, and bobwhite quail dietary LC₅₀, respectively. EEB classified all three studies as **supplemental for a formulated product**. However, RASSB has reexamined the studies and concludes that they can be upgraded to **core for a formulated product**. They are scientifically sound and satisfy the requirements for an antimicrobial pesticide. Copies of amended Data Evaluation Records (DERs) will be forwarded upon finalization.

RASSB believes that the data provided are sufficient to support the proposed uses. An avian acute oral LD₅₀ study is not required based on the rationale EEB provided under barcodes D227470 and D230591. Further, RASSB believes that there are one, or several, avian acute oral LD₅₀ studies available for various copper compounds (RASSB is checking into this). Considering these items, RASSB concludes that a waiver of the avian acute oral LD₅₀ study is appropriate. No further ecotoxicity data are required to support the registration of Microfree B-240 as an indoor-use antimicrobial pesticide.

Microfree T-558; 069897-G; Barcode D234550

The registrant has submitted three new ecological effects studies under barcode D234550 to support proposed registration: MRIDs 440223-07, 440223-08, and 440223-09; rainbow trout 96-hour LC₅₀, *Daphnia magna* 48-hour EC₅₀, and bobwhite quail dietary LC₅₀, respectively. RASSB has performed a cursory review of these studies and concludes that these studies can be classified **core for a formulated product**. They are scientifically sound and satisfy the requirements for an antimicrobial pesticide. (RASSB will schedule development of DERs and forward final DERs upon completion.) The results of these studies are as follows:

Rainbow trout 96-hour LC ₅₀ , (440223-07) :	3.3 ppm (product)
<i>Daphnia magna</i> 48-hour EC ₅₀ , (440223-08) :	1.4 ppm (product)
Bobwhite quail dietary LC ₅₀ , (440223-08):	> 5620 ppm (product)

RASSB believes that the data provided are sufficient to support the proposed uses. Based on the rationale EEB provided under barcodes D227470 and D230591, RASSB concludes that a waiver of the avian acute oral LD₅₀ study is appropriate. No further ecotoxicity data are required to support the registration of Microfree B-240 as an indoor-use antimicrobial pesticide.

Microfree B-507; 069897-R; D227470 and D230591

Three studies were submitted and reviewed previously by EEB of EFED under barcode D230591. These studies are: MRIDs 440031-02, 440031-03, and 440031-04; rainbow trout 96-hour LC₅₀, *Daphnia magna* 48-hour EC₅₀, and bobwhite quail dietary LC₅₀, respectively. In that review EEB concluded that all three studies are classified **core for a formulated product**. They are scientifically sound and satisfy the requirements for an antimicrobial pesticide. Further, under barcodes D227470 and D230591 EEB concluded that a waiver request for the avian acute oral LD₅₀ study is appropriate considering: (1) an avian acute oral LD₅₀ study is available for zinc oxide; (2) a rat acute oral LD₅₀ study is available for silver; and (3) the use of these data are adequate to support proposed registration and to determine labeling of the TEP, Microfree B-507. No additional ecotoxicity data are required to support the registration of Microfree B-507 as an indoor-use antimicrobial pesticide.

RASSB concurs with EEB's conclusions.

Microfree Z-200; 069897-U; Barcode D228217

EEB reviewed this product under barcode D228217, concluding that the registrant's waiver requests for avian and aquatic studies are appropriate (based on a rationale similar to that presented for barcodes D227470 and D230591). No further ecotoxicity data are required to support the registration of Microfree Z-200 as an indoor-use antimicrobial pesticide.

RASSB concurs with EEB's conclusions.

Labeling

Based on the available ecotoxicity data, and when one adjusts the tested "product" results to results based on "active ingredient", RASSB concludes that the four Microfree products are toxic to aquatic organisms. Therefore, the following precautionary statement is appropriate:

"This product is toxic to fish and aquatic invertebrates."

In closing, if you have questions on the above, please contact Norm Cook at (308-8253).