UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Note to Reader
September 9, 1998

Background: As part of its effort to involve the public in the implementation of the Food Quality Protection Act of 1996 (FQPA), which is designed to ensure that the United States continues to have the safest and most abundant food supply, EPA is undertaking an effort to open public dockets on the organophosphate pesticides. These dockets will make available to all interested parties documents that were developed as part of the U.S. Environmental Protection Agency's process for making reregistration eligibility decisions and tolerance reassessments consistent with FQPA. The dockets include preliminary health assessments and, where available, ecological risk assessments conducted by EPA, rebuttals or corrections to the risk assessments submitted by chemical registrants, and the Agency's response to the registrants' submissions.

The analyses contained in this docket are preliminary in nature and represent the information available to EPA at the time they were prepared. Additional information may have been submitted to EPA which has not yet been incorporated into these analyses, and registrants or others may be developing relevant information. It's common and appropriate that new information and analyses will be used to revise and refine the evaluations contained in these dockets to make them more comprehensive and realistic. The Agency cautions against premature conclusions based on these preliminary assessments and against any use of information contained in these documents out of their full context. Throughout this process, if unacceptable risks are identified, EPA will act to reduce or eliminate the risks.

There is a 60 day comment period in which the public and all interested parties are invited to submit comments on the information in this docket. Comments should directly relate to this organophosphate and to the information and issues

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available in the information in this docket. Once the comment period closes, EPA will review all comments and revise the risk assessments, as necessary.

These preliminary risk assessments represent an early stage in the process by which EPA is evaluating the regulatory requirements applicable to existing pesticides. Through this opportunity for notice and comment, the Agency hopes to advance the openness and scientific soundness underpinning its decisions. This process is designed to assure that America continues to enjoy the safest and most abundant food supply. Through implementation of EPA's tolerance reassessment program under the Food Quality Protection Act, the food supply will become even safer. Leading health experts recommend that all people eat a wide variety of foods, including at least five servings of fruits and vegetables a day.

Note: This sheet is provided to help the reader understand how refined and developed the pesticide file is as of the date prepared, what if any changes have occurred recently, and what new information, if any, is expected to be included in the analysis before decisions are made. **It is not meant to be a summary of all current information regarding the chemical.** Rather, the sheet provides some context to better understand the substantive material in the docket (RED chapters, registrant rebuttals, Agency responses to rebuttals, etc.) for this pesticide.

Further, in some cases, differences may be noted between the RED chapters and the Agency's comprehensive reports on the hazard identification information and safety factors for all organophosphates. In these cases, information in the comprehensive reports is the most current and will, barring the submission of more data that the Agency finds useful, be used in the risk assessments.

Jack Housenger, Acting Director
Special Review and Reregistration
Division

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OFFICE OF
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TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: ETHION RISK MITIGATIONS: ADDENDUM TO THE ETHION REREGISTRATION ELIGIBILITY DOCUMENT

TO: Robert Richards, Chemical Review Manager
Reregistration Section 2
Reregistration Branch
Special Review and Reregistration Division (7508W)

FROM: Laura E. Morris, Acting Section Head
Reregistration Section

THRU: Larry C. Dorsey, Chief
Occupational and Residential Exposure Branch
Health Effects Division (7509C)

Please find below the OREB review of:

DP Barcode: D211512

Pesticide Chemical Code: 058401

EPA Reg. Nos.: 279-01254; 51036-00089; 51036-00090

PHED: Yes

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I. Introduction

OREB has been requested by SRRD to provide additional information as a result of the meeting with FMC regarding the Ethion Reregistration Eligibility Document (RED). The registrant has proposed several risk mitigation techniques which OREB has been requested to consider in its evaluation of potential exposure/risk to workers. In addition, the registrant has requested copies of the study reviews conducted by OREB, as noted in the Ethion RED.

II. Detailed Considerations

The registrant has proposed to reduce the maximum application rate to 2.5 lbs ai/acre and to use enclosed cabs for airblast applications. Below is a summary of the exposure assessment using
surrogate exposure values from the Pesticide Handlers Exposure Database:

Mixer/loaders wearing normal work clothing and chemical resistant gloves using a closed system would be exposed to 0.026 mg/kg/day [based on the unit dermal exposure value of 0.009 mg/lb ai using 16 - 31 acceptable grade replicates from PHED: Assumptions - max. label application rate is 2.5 lb/ai acre with a daily maximum of 80 acres treated/day.]

Applicators (wearing normal work clothing and chemical resistant gloves) in enclosed cabs during airblast applications would be exposed to 0.012 mg/kg/day [based on the unit dermal exposure value of 0.02 mg/lb/ai using 20 - 30 Grade C replicates from PHED: Assumptions - max. label application rate is 2.5 lb/ai acre with a daily maximum of 17 acres treated/day.]

Foliar dislogdeable residue data for ethion were used to determine the appropriate restricted entry interval. Reentry calculations were extracted from "Margin of Safety Risk Assessment Based on Surrogate Exposure Models for Workers Reentering Citrus Treated with Ethion Insecticide/Miticide, Revision 1" from Nigg, 1977 by Doug Baugher (MRID No. 45089-01). Residues for ethion and the oxon of ethion were considered in the study. Using a Margin of Exposure of 100 the recommended restricted entry interval for total residues (ethion and the oxon) is 21 days after application (based on the NOEL of 0.8 mg/kg/day).

III. Conclusions/Recommendations

As indicated in the Toxicology Selection Endpoint Document dated 3/14/94 from Tox 2/HED, the toxicological endpoint to be used for both short term and intermediate term occupational or residential exposure is 0.8 mg/kg/day based on a 21 day dermal

rabbit study. Based on the indicated NOEL, the estimated Margins of Exposure are as follows:

MOE = 31 for the mixer/loader exposed to 0.026 mg/kg/day
MOE = 66 for the applicator performing an airblast application in an enclosed cab (exposed to 0.012 mg/kg/day).

The recommended **Restricted Entry Interval is 21 days after application.**

The study reviews as requested by the registrant will be submitted to SRRD in a separate memorandum.

cc: Laura Morris/OREB
Esther Saito/7508W
Linda Kutney/7509C
Correspondence File
Chemical File