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

JUL 29 1987

MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: COMMAND®: RCB Deferral on Off-Target Residue of Ortho-Chlorobenzyl Alcohol (OCBA)

FROM: Whang Phang, Ph.D. 7/23/87
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TO: R. Taylor / J.Yowell, PM (25)
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THROUGH: Marcia van Gemert, Ph.D. 7/23/87
Head, Section III
and
Willam Burnam, Deputy Branch Chief
Toxicology Branch/HED (769c)

7/24/87

Action Code: 360 Record No.: 198,643/198,644
Caswell No.: 463D EPA ID No.: 279-3052 & 279-3053

INTRODUCTION:

The registrant, FMC, has submitted various metabolism and simulated spray-drift studies on Command; the Residue Chemistry Branch (RCB) has reviewed these studies and has estimated the residue level of othor-chlorobenzyl alcohol (OCBA) a plant metabolite in alfalfa and in goats consuming Command treated alfalfa. The toxicological significance of these residue levels has been referred to Toxicology Branch.

DISCUSSION and CONCLUSION:

Based upon the alfalfa metabolism study on radiolabelled Command, RCB has estimated the residue levels of parent Command to be less than 0.1 ppm and the total residue levels to be 3 ppm or less. Of the 3 ppm, no more than 1.5 ppm (and perhaps far less) would be OCBA (Memorandum of Bradley to Yowell, May 11, 1987). The plant metabolite, OCBA, was not observed in the rat metabolism study on Command. In a goat metabolism study, animals were fed Command contaminated alfalfa. Residue Chemistry Branch has evaluated this study, and concluded that under the experimental conditions no detectable residue levels of Command are likely to occur in animals, and no conclusion can be made about the possible OCBA levels in animals.

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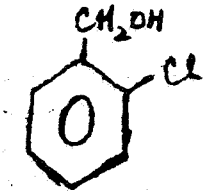
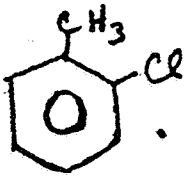
There are no acceptable toxicology data on OCBA. However, OCBA is structurally similar to 2-chlorotoluene (2-CT), and in a rat metabolism study, OCBA has been shown to be a major metabolite of 2-CT (32 to 42% of the administered dose). Structure-activity relationship analysis may be applicable between OCBA and 2-CT, and the toxicity of OCBA might likely be analogous to that of 2-CT.



OCBA



2-Chlorotoluene

The toxicological data of 2-CT in animals has been thoroughly evaluated by the Test Rules Development Branch of Office of Toxic Substances. These data are summarized in the Federal Register (Vol. 50; No. 192; pp 40445-40449) as the rationale for not requiring any further toxicological testing on 2-CT. These data are extracted and listed below:

(1). Gene mutation, chromosomal aberration, and DNA damage and repair assays all show negative results.

(2). In rat teratoloty study, embryotoxicity only observed at the maternally toxic dose (HDT) whereas in rabbit teratology study no fetal toxic effects was observed in the highest dose.

(3). In both rat and dog subchronic studies, no treatment related effects were observed in all the treated animals.

(4). In the dose-range-finding studies for rat and rabbit teratology studies cited above, both rats and rabbits showed dose related weight loss. In rats increase in liver weights amd decrease in splenic weights were also observed

Therefore, based upon the structure activity relationship and and metabolism data of 2-CT, further testing of OCBA will probably yield results similar to those of 2-CT and does not appear to be necessary.

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