



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

003867

7-6-84

MEMORANDUM

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: Registration of Ammo® 2.5 Oil For Use on Cotton. Active Ingredient is Cypermethrin; Accession No. 252997; E.P.A. File No. 279-GNUU.

TO: Adam Heyward PM# 17  
Registration Division (TS-767C)

FROM: John E. Whalan, Toxicologist  
Section II, Toxicology Branch  
Hazard Evaluation Division (TS-769c)

THRU: Albin B. Kocialski, Acting Section Head  
Section II, Toxicology Branch  
Hazard Evaluation Division (TS-769c)  
and  
William Burnam, Chief  
Toxicology Branch HED (TS-769c)

ABK 6/28/84  
HFW/BS 7/6/84

Tox. Chem. No. 271DD

Recommendation:

The Toxicology Branch has reviewed the submission for the registration of Ammo® 2.5 Oil insecticide for use on cotton. The Toxicology Branch has no objections to the registration of this product. The signal word "Caution" is supported by the data. However, the label should include the precautionary statement, "Avoid contact with skin. May cause sensitizing reactions in some individuals."

An ADLD<sub>50</sub> study was not submitted for the 2.5 Oil formulation. Based upon the reasoning given in the review, the category of hazard for dermal absorption was determined to be Category III, so the study need not be conducted.

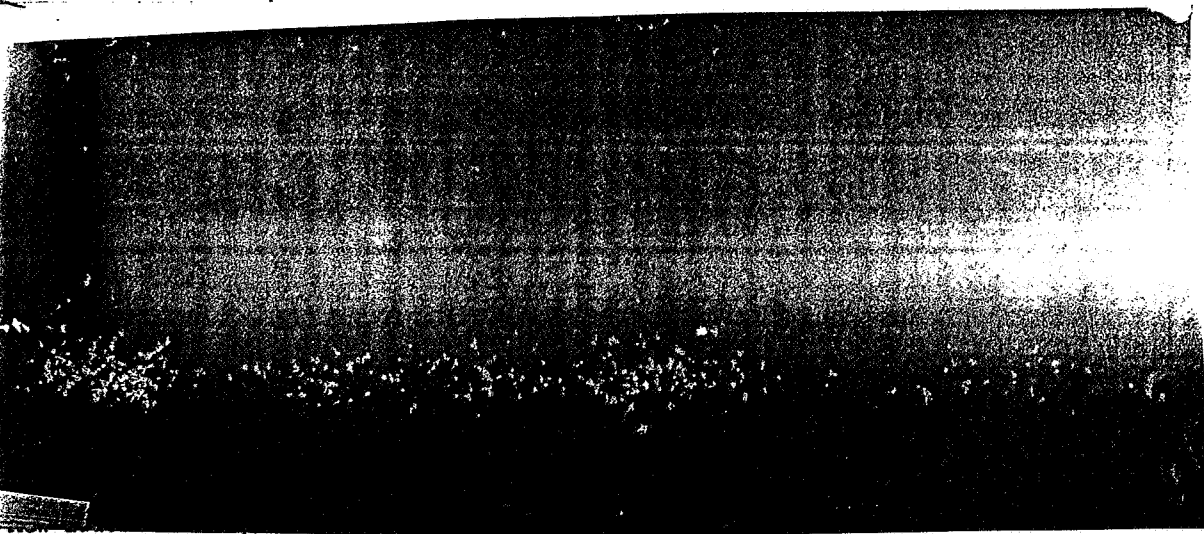
Separately, RCB should be consulted as to whether or not this formulation will affect currently approved tolerances.

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Action Requested:

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FMC is requesting the registration of Ammo® 2.5 Oil Insecticide for use on cotton. Two water-soluble formulations have been registered. The formulations and signal words of the three products are as follows:



Study Type: Acute Oral LD<sub>50</sub> of Ammo® 2.5 Oil in Rats

Accession No.: 252997

FMC Report No.: AB3-1048, November 17, 1983

Sponsor: FMC Corporation, Philadelphia, PA

Test Material: Ammo® (FMC 45806) 2.5 Oil Insecticide

Groups of ten male and ten female Sprague-Dawley rats (200-285g) were fasted overnight and administered single oral doses of undiluted Ammo® 2.5 Oil via a stainless steel dosing needle at levels of 2000, 2500, 3000, and 4000 mg/kg. They were observed six times on the day of dosing and twice daily on the following days. Body weights were measured on the day of dosing, day 7, and on the days of death and final sacrifice (day 14). All rats were examined for gross lesions at necropsy.

All deaths occurred between days 1 and 5. The mortality pattern was as follows:

- MALE -		- FEMALE -		- COMBINED -	
Dose (mg/kg)	Mortality %	Dose (mg/kg)	Mortality %	Dose (mg/kg)	Mortality %
4000	100	4000	90	4000	95
3000	70	3000	90	3000	80
2500	40	2500	70	2500	55
2000	10	2000	30	2000	20

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the probit analysis results were as follows:

	<u>MALE</u>	<u>FEMALE</u>	<u>COMBINED</u>
LD <sub>50</sub> (mg/kg)	2665	2227	2446
95% Confidence limits	2371-2958	1804-2650	2228-2664
Slope	16.9	11.2	14.9

Dose-related clinical signs included tremors, ataxia, clonic convulsions, prostration, decreased locomotion, abdominogenital staining, nasal and oral discharges, and lacrimation. Most of these signs subsided after 1-2 days, except for clonic convulsions, ataxia, decreased locomotion, and abdominogenital staining. All clinical signs had reversed by day 8. Body weight gain in the surviving rats was not diminished by Ammo® administration. Rats in the 3000 (2 males, 1 female) and 4000 (1 male, 2 females) mg/kg dose levels had gross findings of blood in the intestines.

Conclusion:

	<u>AOLD<sub>50</sub></u>	<u>95% Confidence limits (mg/kg)</u>	<u>Slope</u>
Males	2665	2371-2958	16.9
Females	2227	1804-2650	11.2
Combined	2446	2228-2664	14.9

Classification: Core guidelines

Category of Toxicity: III

Study Type: Eye Irritation of Ammo® 2.5 Oil in Rabbits

Accession No.: 252997

FMC Report No.: A83-1050, November 14, 1983

Sponsor: FMC Corporation, Philadelphia, PA

Test Material: Ammo® (FMC 45806) 2.5 Oil Insecticide

Four male and five female New Zealand White rabbits (2.10-2.61 kg) were selected for this study. They were clinically healthy and had no eye lesions. The eyes were examined using fluorescein dye. The test (right) eyes of these rabbits were instilled with 0.1 ml aliquots of Ammo® 2.5 Oil into the lower conjunctival sac, and the eyes held closed for one second. The eyes of three rabbits were washed with 100 ml of tap water 20-30 seconds after dosing. The eyes of the remaining six rabbits remained unwashed. The left eyes served as controls. Using the method of Draize, the test eyes were assessed for irritation after 1, 24, 48, and 72 hours, and on day 4.

The mean irritation scores were as follows:

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<u>Scoring Interval</u>	<u>- Irritation Score -</u>	
	<u>Unwashed</u>	<u>Washed</u>
1 hour	7.7	8.0
24 hours	1.7	0.7
48 hours	3.0	0
72 hours	2.7	0
Day 4	0	0

There was no corneal or iridic involvement in any rabbits. Conjunctival redness, chemosis, and discharge were seen at one hour with discharge being the most pronounced sign. The severity of these signs had decreased significantly after 24 hours, particularly in the washed eyes. There were no indications of irritation in the washed eyes at 48 hours, nor in the unwashed eyes on day 4.

Conclusion: Instillation of Ammo® 2.5 Oil into rabbit eyes caused mild to marked conjunctivitis which was most severe at one hour and reversed within 2 to 4 days. Washing shortened the duration of irritation.

Classification: Core guidelines

Category of Toxicity: III

Study Type: Dermal Irritation of Ammo® 2.5 Oil in Rabbits

Accession No.: 252997

FMC Report No.: A83-1049, October 31, 1983

Sponsor: FMC Corporation, Philadelphia, PA

Test Material: Ammo® (FMC 45806) 2.5 Oil Insecticide

A primary skin irritation study was performed using three male and three female New Zealand albino rabbits (2.27-2.66 kg). Two 5 cm square sites on opposite sides of the spinal column were prepared for dosing. One site (the one on the right) was abraded. Each site was dosed with 0.5 ml of Ammo 2.5 Oil and covered with a gauze pad and hypoallergenic tape. The trunk of each rabbit was wrapped to prevent test site disturbance and Elizabethan collars were fitted. After four hours of exposure, the bandages were removed and the test sites were wiped with clean gauze. Using the method of Draize, the test sites were scored for irritation at 4.5, 24, 48, and 72 hours after application. The mean irritation scores were as follows:

<u>Scoring Interval</u>	<u>Irritation Score</u>
4.5 hours	0.58
24 hours	0
48 hours	0
72 hours	0

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Very slight edema was seen at 4.5 hours in four intact sites and three abraded sites. All signs of dermal irritation had reversed at 24 hours. The rabbits remained healthy throughout the study. The Primary Irritation Index was zero. *essentially*

Conclusion:

Ammo® 2.5 Oil is non-irritating to both abraded and intact rabbit skin.

Classification: Core guidelines

Toxicity Category: IV

Study Type: Acute Dermal LD50 Study:

An ADLD50 study was not conducted on the 2.5 Oil formulation. However, available data for the "old EC" formulation demonstrated that no deaths occurred when a single dose of 2000 mg/kg was administered to rats. Examination of both formulations indicates that they are generally similar with the exception that in the 2.5 Oil formulation.

It is our judgement that this change in formulation for the 2.5 Oil would not be significant for the purpose of the category of dermal hazard. Toxicology Branch would therefore expect the Category of Toxicity for the 2.5 Oil by the dermal route to be Category III, based on a comparison of the formulations for the "old EC" and 2.5 Oil, and the toxicity data available for the "old EC" formulation. The ADLD50 study for the 2.5 Oil therefore need not be conducted.

*John E. Whalan*

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