UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Coberly/346

SUBJECT: DOG Guard flea and tick insecticide and mosquito repellent.

DATE: AUG 14 1975

FROM: TB

TO: Mr. James Rea, Product Manager #13

Registration No.: 6621-ARPA61

Formulation:

Active Ingredients

Pyrethrins - 0.06%
Piperonyl butoxide - 0.12%
N-octyl bicycloheptene dicarboximide (MGK-264) - 0.20%
N,N - Diethyl toluamide - 14.25%
other isomers - 0.75%
Methoxychlor, technical - 0.50%
Petroleum distillate - 84.21%

Summary & Recommendations

1) No toxicology data was submitted in support of this registration.

2) Adequate data is on file to suggest that this use of pyrethrins, piperonyl butoxide and MGK-264 will not present a hazard to the user or to the animal.

3) Methoxychlor has been a subject of debate within the agency regarding the compound's potential carcinogenicity. To date, this reviewer knows of no permanent resolution of that controversy. Until an agency position is defined, however, methoxychlor tolerances and registrations are still active.

4) Diethyltoluamide in concentrated form causes moderate to severe eye damage. In the absence of supportive data for this formulation, a stronger and/or more prominent eye safety statement is recommended: "Avoid contact with eyes. In case of contact, flush eyes with plenty of water."

This product is intended for dermal application to dogs for the purpose of killing fleas and ticks, and repelling mosquitoes. The formulation contains pyrethrins, piperonyl butoxide, and MGK-264, all of which have been adequately defined toxicologically and present no safety problem resulting from this animal use. However, several years ago methoxychlor was a subject of debate within the agency. The controversy stemmed from data which suggested that methoxychlor was a possible carcinogen in a particular strain of mice and a tumorigen in rats. Tolerances have been established for methoxychlor and still

remain in effect. To the best of this reviewer's knowledge the problem has not been resolved. A review of methoxychlor as a substitute for DDT is due from C & E early in 1976. Until such time as firm agency policy regarding this chemical is established, formulations containing methoxychlor are still being registered.

The mosquito repellent N,N-diethyl toluamide (DEET) comprises 14.25% of the proposed formulation. Below are some pertinent acute and subacute data obtained from agency files.

Acute Oral LD_{50} (rat) male - 1.95g/kg (C.L.1.18-3.25g/kg)

Eye Irritation (rabbit) - a single application of 0.05 ml of undiluted (95-100%) N,N-diethyl m-toluamide produced moderate to severe eye irritation.

Acute Dermal (rabbit) - LD_{50} = 8-10g/kg

Skin Irritation (undiluted) - mild to moderate dermal irritation characterized by erythema, atonia and desquamation.

Subacute Dermal - (Dogs and Rabbits) - (Woodard Research, 1959)

A daily dermal application of 0.75 ml/kg (undiluted for 13 weeks produces no observable effect except for a mild skin irritation. Higher doses produce severe skin lesions associated with kidney damage, but have no effect on the hematopoietic system (there was at one time a question of DEET producing various blood dyscrasias). 0.3 ml/kg is the subacute dermal NEL in the dog (13 weeks).

Subacute Oral (Woodard Research, 1959)

A daily dose of 0.1 ml/kg by the oral route for 13 weeks is without effect in the dog. 0.3 ml/kg produced mild to moderate central nervous excitation and emesis.

Although no data was submitted in support of this registration, a toxicological profile may be constructed from available data in the literature and EPA files. Assuming no synergisms beyond the expected, a signal word of "CAUTION" is adequate. A stronger and/or more prominent eye safety comment, however, is recommended due to the presence of 14% diethyl toluamide in the proposed formulation.

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cc: Branch Reading File
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OEP 8/14/76