

3-7-73 PB-843
TNR-1511
ANV

Dr. Schmidt

ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D. C. 20460

001511

Date: March 7, 1973

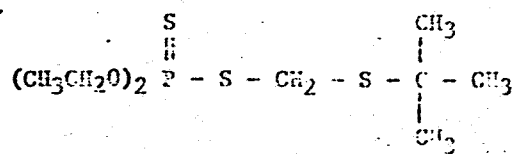
Reply to
Address:

Subject: ST-100 15G Insecticide for use on corn, Temporary Permit.

To: Mr. Lee TerBush, Acting Chief
Coordination Branch
Registration Division

Registration No. : 241-ERP-X
Related Petition : Pesticide Petition No. 361343
Registrant : ACCO
Agricultural Division
Princeton, NJ 08540
Product Name : No common name
Use Pattern : To be applied on corn in a 7 inch
band over the corn row directly
behind the planter shoe in front
of the press wheel. Amount
applied is 6-8 oz/1000 ft for 20
inch rows or 5-6.5 lbs/acre with
40 inch rows.

Chemical Structure :



S-[(tert-butylthio)methyl]0,0-dimethyl
phosphorodithiopate

Formulation :

Active Ingredient

ST-100 18.5%

Inert Ingredients



information which may reveal the identity of an inert ingredient is not included

1874

Toxicology

Acute Oral 96.7% Tech AG 92,100

Rat Male LD₅₀ 4.5 mg/kg
 Female LD₅₀ 9.0 mg/kg
 Mouse Male LD₅₀ 3.5 mg/kg
 Female LD₅₀ 9.2 mg/kg
 Dog Male LD₅₀ 4.5 mg/kg
 Female LD₅₀ 6.5 mg/kg

Dermal 96.7% Tech AG 92,100

Rabbit Male LD₅₀ 1.1 mg/kg

Inhalation

Rat Male - 2 of 10 died after exposure for 7 hours to saturated vapor

Skin Irritation

Rabbit - all died within 24 hours with application of 0.5 ml on skin

Eye Irritation

Rabbit - all died within 24 hours after receiving 0.1 ml in the eye

Subacute Studies

Rat Oral 31 days No effect level 0.5 ppm ChE
 Mice Oral 31 days No effect level 4 ppm gross observations
 Dog Oral 30 days 0.01 mg/kg depressed plasma ChE by 4 weeks.
 Brain ChE depressed significantly at 0.25 mg/kg.

Acute Toxicity of 85.5% Tech AG 92,100

Oral Rat Male LD₅₀ 1.6 mg/kg
 Oral Mouse Female LD₅₀ 5.0 mg/kg
 Dermal Rabbit Male LD₅₀ 1.0 mg/kg
 Skin Irritation Rabbit - all rabbits died with 0.25 ml in 24 hours.
 Eye Irritation Rabbit - all rabbits died with 0.1 ml in 24 hours.

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Acute Toxicity of AG 92,100

Oral Rat Male LD₅₀ 11.7 mg/kg

Dermal Rabbit Male LD₅₀ 10.2 mg/kg

Skin Irritation Rabbit - all died with 0.5 gm in 24 hours

Eye Irritation Rabbit - all died with 0.1 gm in 24 hours

Subacute Toxicity Tech AG 92,100

Rat-Oral - Fed at levels 0.25, 1.0 and 2.0 mg/kg for 3 months.
Reduced ChE activity at all levels.

Dog-Oral - Fed at 2.5, 10 and 40 mg/kg daily for 6 months.
No effects at 26 weeks systemically. No effect
for ChE inhibition was 2.5.

Teratogenic Study Tech AG 92,100

Rats fed at levels of 0.075 and 0.15 mg/kg/day during days 6-15 gestation. No significant difference found between test and control offspring, maternal mortality, implantation sites, resorption sites, fetal abnormalities and development.

Neurotoxicity in Mice Tech AG 92,100

Mice treated with 40 mg/kg showed no clinical evidence of residual neurotoxicity.

3-Generation Reproduction Study Tech AG 92,100

First generation was judged normal results from future generations will follow.

18-Month Carcinogenicity in Mice Tech AG 92,100

Exophthalmos adjudged to be compound-induced first seen at 22 weeks a few rupturing of eyes but not always following exophthalmos occurred.

24-Month Carcinogenicity in Mice Tech AG 92,100

To be completed 3/27/74. At 24 weeks there is significant RBC ChE depression at the 0.25 ppm level and in Brain ChE depression at 12 weeks at the 4 ppm level. No carcinogenicity observed in the dying animals.

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Acute Toxicity of Phosphorus - Containing Metabolites of AG 92,100

Phosphorothioic acid, S-(tert-butylthio)methyl 0,0-diethyl ester
Albino Mouse Oral LD₅₀ - 2.2 mg/kg

Phosphorothioic acid, S-(tert-butylsulfinyl)methyl 0,0-diethyl ester
Albino Mouse Oral LD₅₀ - 1.1 mg/kg

Phosphorothioic acid, S-(tert-butylsulfonyl)methyl 0,0-diethyl ester
Albino Mouse Oral LD₅₀ - 3.4 mg/kg

Phosphorodithioic acid, S-(tert-butylsulfinyl)methyl 0,0-diethyl ester
Albino Mouse Oral LD₅₀ - 3.4 mg/kg

Phosphorodithioic acid, S-(tert-butylsulfonyl)methyl 0,0-diethyl ester
Albino Mouse Oral LD₅₀ - 14.0 mg/kg

Acute Toxicity of Non-Phosphorus-Containing Metabolites of AG 92,100

Sulfonide, (tert-butylsulfonyl)methyl methyl.
Albino Mouse Oral LD₅₀ greater than 5000 mg/kg

Sulfonide, tert-butyl (methylsulfonyl)methyl
Albino Mouse Oral LD₅₀ - 3540 mg/kg

Sulfone, tert-butyl (methylsulfonyl)methyl
Albino Mouse Oral LD₅₀ - 4660 mg/kg

Conclusions

Pending the requirements of the other branches, TE finds that the toxicity data presented here will support the registration of this material.

RFB 3/12/73

Robert P. Schmidt, D.V.M.
Toxicology Branch
Registration Division

cc: DB, EEB, HEB, IRD,
PCCritchlow
GEWhitmore
Division Reading File
Branch Reading File
PP #301340

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