3-7-73 PB-843
TXR-1511

001511

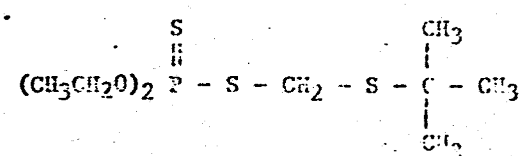
ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Date: March 7, 1973

Reply to
Attn of:

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

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

Registration No.	:	241-EXP-X
Related Petition	:	Pesticide Petition No. 3G1340
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 pressure 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]O,O-diethyl phosphorodithioate
Formulation	:	Active Ingredient
		ST-100 15.5%
		Inert Ingredients
		[redacted]

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

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Toxicology

Acute Oral 96.7% Tech AC 92,100

Rat Male	LD_{50}	4.5 mg/kg
Female	LD_{50}	9.0 mg/kg
Mouse Male	LD_{50}	3.5 mg/kg
Female	LD_{50}	9.2 mg/kg
Dog Male	LD_{50}	4.5 mg/kg
Female	LD_{50}	6.5 mg/kg

Dermal 96.7% Tech AC 92,100

Rabbit Male LD_{50} 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 AC 92,100

Oral Rat Male LD_{50} 1.6 mg/kg
Oral Mouse Female LD_{50} 5.0 mg/kg
Dermal Rabbit Male LD_{50} 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 AC 92 100 100

Oral Rat Male LD_{50} 11.7 mg/kg
Dermal Rabbit Male LD_{50} 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 AC 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 - Levels 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 AC 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 Hens Tech AC 92, 100

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

3-Generation Reproduction Study Tech AC 92,100

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

18-Month Carcinogenicity in Mice Tech AC 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 Dogs Tech AC 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 AC 92,100

Phosphorothioic acid, S-(tert-butylthio)methyl O,O-diethyl ester
Albino Mouse Oral LD_{50} - 2.2 mg/kg

Phosphorothioic acid, S-(tert-butylsulfinyl)methyl O,O-diethyl ester
Albino Mouse Oral LD_{50} - 3.4 mg/kg

Phosphorothioic acid, S-(tert-butylsulfonyl)methyl O,O-diethyl ester
Albino Mouse Oral LD_{50} - 3.4 mg/kg

Phosphorodithioic acid, S-(tert-butylsulfinyl)methyl O,O-diethyl ester
Albino Mouse Oral LD_{50} - 3.4 mg/kg

Phosphorodithioic acid, S-(tert-butylsulfonyl)methyl O,O-diethyl ester
Albino Mouse Oral LD_{50} - 14.0 mg/kg

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

Sulfoxide, (tert-butylsulfonyl)methyl methyl.
Albino Mouse Oral LD_{50} greater than 3000 mg/kg

Sulfoxide, tert-butyl (methylsulfonyl)methyl
Albino Mouse Oral LD_{50} - 3549 mg/kg

Sulfone, tert-butyl (methylsulfonyl)methyl
Albino Mouse Oral LD_{50} - 4660 mg/kg

Conclusions

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

RPS 3/12/73

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

cc: DB, EEB, HFB, IRD, RPSchmidt/km 03-27-73
PCCritchlow
GEWhitmore
Division Reading File
Branch Reading File
PP #3G1340

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