

US EPA ARCHIVE DOCUMENT

REVIEW SUMMARY

101201

3-31-75

J.W. AKERMAN (1)  
ECOLOGICAL EFFECTS  
REVIEW SUMMARY

Chemical Trade Monitor 4 Spray

Common Monitor

Chemical O,S-dimethyl phosphoramidothioate 40%

Company Chevron Chemical Company

Submission TEMP PERMIT PETITION 5F1571 REGISTRATION 239-2404

Date Submitted 11-5-74

Date received 3-31-75

Type of chemical Insecticide

Use Cabbage, Broccoli, Brussel Sprouts, Cauliflower, Head lettuce, Cotton, Potatoes

(See Attached Labeling)

Data submitted for review

Environmental safety:

Mammal LD50 \_\_\_\_\_

Mammal chronic ✓

Fish \_\_\_\_\_

Bird \_\_\_\_\_

Shrimp, crab, oyster \_\_\_\_\_

Other \_\_\_\_\_

Environmental chemistry (70-15)

Fish residue \_\_\_\_\_

Other \_\_\_\_\_

Chemical

Conclusions:

- ① New crop added is tomatoes at 0.75 - 1.0 # ai/A on 7-10 day interval.
- ② Adding head lettuce which was previously registered but dropped pending additional field residue studies: 0.5-1.0 # ai/A 7 day intervals.
- ③ Change in cauliflower: From PHI of 28 days to 14 days and <sup>max of</sup> 10 pts (5 # ai)
- ④ Change in Cotton: From PHI of 50 days to "Do not apply after 65% of bolls are open <sup>per crop</sup>"
- ⑤ Proposed Tolerances:
 

cauliflower	_____	2.0 ppm
lettuce	_____	2.0 "
tomatoes	_____	2.0 "
tomato pomace	_____	5.0 "
cottonseed hulls	_____	3.0 "
- ⑥ 2 ppm or less for 90 days + 13 wks for Rats appears to be no effect level.
- ⑦ need data on mallards; need rep. study on birds since Rose one on Offshore.
- ⑧ Label Res: "W-4, W-10, W-21, W-34, W-35, W-38, W-99." Appears o.k.

Recommendations

NAC proposed uses

An expansion of this product's use to any new crops with large acreages will necessitate dietary L50 studies with mallard duck and avian reproduction studies.

RK 4-75 M/Cook

ENVIRONMENTAL SAFETY  
DATA ABSTRACT

J. W. AKERMAN  
ECOLOGICAL EFFECTS

Chemical O,S-dimethyl phosphoramidothioate 40%

Citation Chevron Chemical Company

Reg. no. 239-2404

Exp permit \_\_\_\_\_

Ret. no. SF1571

Submission 11-5-74  
DATE

Accession no.

ORGANISM	DOSE	SYMPTOM/EFFECT	TEST MATERIAL
Beagle Dogs ♂♂+♀♀ 90-Day Cholinesterase Study	0.025, 0.075, 0.25 mg/kg/day	① Wt loss at 0.25 mg/kg ② Food consumption less at 0.25 mg/kg. ③ Depressed erythrocyte cholinesterase at 0.25 mg/kg ④ Appears that no adverse effects were noted with gains in ♀♀ at 0.025 & 0.075 mg/kg/day except for ↓ food consumption.	<del>technical</del> 70% a.i. technical
Beagle Dogs ♂♂+♀♀ 34-wk Cholinesterase Study	0.025, 0.025, 0.050, 0.075, 0.1, 0.125, 0.2, 0.3, 0.4, 0.5, 0.6 mg/kg/day	Minimum effect levels for depression of plasma cholinesterase activity were 0.2 + 0.3 mg/kg/day for ♂♂+♀♀, respectively. Minimum effect level for depression of erythrocyte cholinesterase activity was 0.3 mg/kg/day for both ♂♂+♀♀. No overt signs of cholinesterase depression were observed throughout the study.	75% a.i.
Beagle Dogs ♂♂+♀♀ 13-wk Feeding Study	0, 1.5, 5, and 15 ppm	No adverse effects noted except at 5 + 15 ppm levels where anti-cholinesterase activity was observed: activities in plasma & erythrocytes were inhibited.	technical
Rat ♂♂+♀♀ 90-Day Cholinesterase Study	0.3, 1.0, 3.0, and 10.0 ppm	① 0.3 & 1.0 caused no significant depression of cholinesterase activity. ② 3.0 & 10.0 ppm caused depression of cholinesterase activity.	75% a.i.
Rat ♀♀ 90-Day Cholinesterase Study	0, 0.25, 0.50, 1.0, 2.0, 4.0 ppm	No EFFECT LEVEL FOR Cholinesterase activity depression = 2.0 ppm. Above 2.0 ppm depression occurs.	technical
Rat ♂♂+♀♀ 13-wk Feeding Study	2, 6, 20, 60 ppm	6 ppm + above had some adverse effects such as anti-cholinesterase activity (6, 20, 60 ppm), decreased food consumption (60 ppm), impaired growth (60 ppm), changes in organ wts (60 ppm).	technical 3

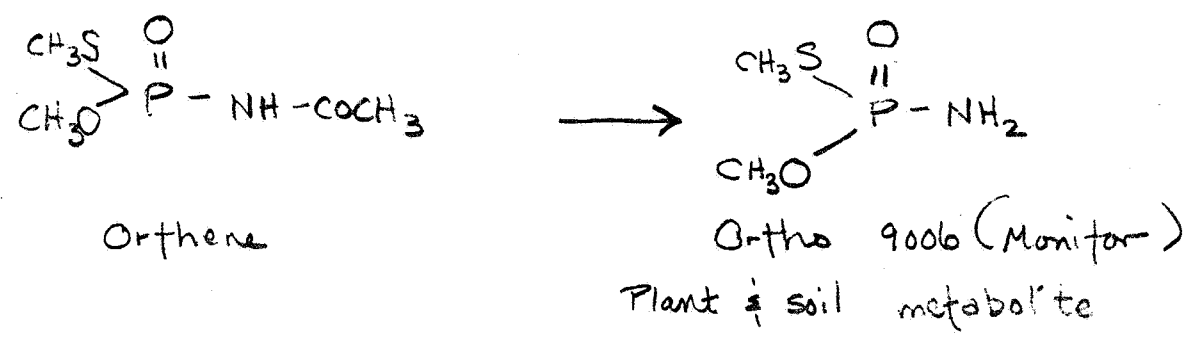
239-2404  
SF1571  
submitted 1-5-74

Chemron Chemical Co. Monitor-NOTES

See Orthene

1. Monitor toxic orally to rats & birds; dermally to rabbits; not toxic to fish. Simulated field study showed Monitor 6 EC (a<sup>#</sup> ai/gal) toxic to rabbits but not to quail!

2.



3. Monitor apparently degrades same as Orthene in soil, i.e. rapidly from 1/2 - 3 days.

4 Previous Registrations

Crop	Rate	# ai/A	Type of Application
Broccoli	0.5 - 1.0	at 7 day intervals	foliage application
Brussels sprouts	0.5 - 1.0	same	" "
cabbage	0.5 - 1.0	same	" "
cauliflower	0.5 - 1.0	same	" "
cotton	0.5 - 1.0	?	" "
potatoes	0.75 - 1.0	7-10 days	" "
lettuce	1.0		

NOTES  
Monitor

293-2457  
5F1571

4. This Submission

- ① New use appears to be tomatoes
  - ② Seeking tolerances on tomatoes, tomato pomace, cottonseed hulls
  - ③ Want to increase existing tolerances on lettuce and cauliflower
- ↑ from 1.0 ppm to
- ④ Tolerance : a 2.0 ppm in or on cauliflower, lettuce, tomatoes
  - " of 5 ppm in tomato pomace.
  - " " 3 ppm " cottonseed hulls.

Questions:

- ① Why no data on mallards?
- ② what about reproductive studies? Done on Orithene but not on Monitor?

Monitor : 4<sup>#</sup> ai/gal = 0.5<sup>#</sup> ai/pt

237-2434  
SF1571

Crop	Rate	ppm seed
Head Lettuce	max of 8 pts/season = 4.0 <sup>#</sup> ai/A	50 ppm
Sunflower	max 10 pts/season = 5.0 ai/A	60 ppm
Tomatoes	max 16 pts/season = 8.0 ai/A	100 ppm
Cabbage...	assume max 10 pts/season = 5.0 ai/A	60 ppm

LC50 = 57.5 ppm

B. Quail: ave body wgt = 27 gms (~30)

ave food consumed/day = 14 gms (~20)

$$\frac{57.5}{1,000,000} = \frac{x}{20,000 \text{ mg}}$$

$$33.3 \overline{) 1080.0}$$

$$x = \frac{(57.5 \times 20,000 \text{ mg})}{1,000,000} = \frac{115.0}{100} = 1.15 \text{ mg/ave food consumed/d}$$

$$x = 1.15 \text{ mg/30 gms} = 38.30 \text{ mg/kg/day}$$

$$\begin{array}{r} 1.15 \\ 33.3 \\ \hline 345 \\ 345 \\ \hline 38.295 \end{array}$$

57.5 ppm = 38.30 mg/kg/day based on above

Methamidophos ecological effects review

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