

US EPA ARCHIVE DOCUMENT

BB-407  
TXR-972

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SEP 18 1970

000972

September 18, 1970

Mr. Henry S. Bussey, Head  
Registration Procedures Section  
Pesticides Regulation Division  
Agricultural Research Service  
U. S. Department of Agriculture  
Washington, D. C. 20250

Reg. No. 239-EGEA  
Referral Date - 4/2/70

Dear Mr. Bussey:

The toxicity data received from you on the product Ortho Monitor 6 Spray containing O,S-dimethyl phosphoramidothioate as the active ingredient have been reviewed.

We have no objection to the registration of this product for the proposed usage pattern.

If you have any questions regarding our comments, please contact us at your convenience.

Sincerely,

Lamar B. Dale, Jr., Ph.D.  
Pharmacologist  
Pesticide Registration Branch  
Division of Pesticide Chemistry  
and Toxicology  
Office of Pesticides

cc:  
BF-219  
BF-219/THHarris  
X TOX FILE

RDCoberly/LBDale/ccw  
9/18/70

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U. S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL RESEARCH SERVICE  
PESTICIDES REGULATION DIVISION  
WASHINGTON, D. C. 20250

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1. DATE OF REFERENCE

3-31-70 wk of 4. 3. 2

INTERDEPARTMENTAL COORDINATION  
OF

ACTIVITIES RELATING TO PESTICIDES  
*Referral of Application for Registration under the  
Federal Insecticide, Fungicide, and Rodenticide Act*

2. FILE SYMBOL/REGISTRATION NO.

239-EGFA

3. DATE OF APPLICATION

3-18-70

NAME & ADDRESS OF APPLICANT OR REGISTRANT

CHEVRON CHEMICAL CO ONTHO DIV  
940 Hensley St  
Richmond, California 94804

5. PRODUCT NAME

ONTHO MONITOR 6 SPRAY

COMMENTS BY COORDINATING AGENCY

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7. BY (NAME)

8. DATE

9. NAME OF AGENCY

PR  
USE  
ONLY

SAFETY - FISH AND WILDLIFE

INITIALS

DATE

COMMENTS

SAFETY - HUMAN

INITIALS

DATE

COMMENTS

OTHER:

INITIALS

DATE

COMMENTS

237-EP-1A  
MONITOR INSECTICIDE  
RESIDUE TOLERANCE PETITION

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FORMULATION

The formulation of the pesticide to be used on raw agricultural commodities is as follows:

ORTHO MONITOR 6 Spray - 6 lb active/gallon.

	<u>lb</u>	<u>Gal</u>
MONITOR insecticide technical [REDACTED]	8.97	0.8227
[REDACTED]	10.60	1.0000

This formulation contains a 10% relative average of the active ingredient, based on a guarantee of 6 lb active per gallon. The method of assay of this formulation is given in the attached report.

The storage stability data for MONITOR 6S are shown on the attached figure. It is felt that the most significant data are those obtained on the sample stored in the field for 13 months. During this period, the temperature varied from 27 to 107°F. The observed loss of 5.7% corresponds to approximately 2 years' stability for the product containing 10% overage. Laboratory samples held at a constant 70°F showed an average of 8% loss per year.

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INERT INGREDIENT INFORMATION IS NOT INCLUDED

Methamidophos toxicology review

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Page \_\_\_\_\_ is not included in this copy.

Pages 4 through 7 are not included in this copy.

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The material not included contains the following type of information:

- Identity of product inert ingredients
  - Identity of product impurities
  - Description of the product manufacturing process
  - Description of product quality control procedures
  - Identity of the source of product ingredients
  - Sales or other commercial/financial information
  - A draft product label
  - The product confidential statement of formula
  - Information about a pending registration action
  - FIFRA registration data
  - The document is a duplicate of page(s) \_\_\_\_\_
  - The document is not responsive to the request.
- 

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

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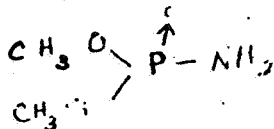
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Chemical Name : O,S-dimethyl phosphoramidothioate

Trade Name : Monitor

Alternate Name : RE-9006; ENT. 27396

Structural Formula : 

Empirical Formula : C<sub>2</sub> H<sub>8</sub> N O<sub>2</sub> P S

Molecular Weight : 141.13

Melting Point : 39-41°C

Density : 1.31 (melt)

Odor : Pungent

Solubility : Infinitely miscible with water and alcohol; less than 1% in kerosene; less than 10% in benzene or xylene.

Volatility : Low

Vapor Pressure : Approx 10<sup>-4</sup> mm Hg at 20°C

Stability : Normal at ambient temperatures

Use : Insecticide for crops

Company : Chevron

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MONITOR

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- Acute Rat Oral (95% Tech) : Male LD<sub>50</sub> = 15.6 mg/KG  
Female LD<sub>50</sub> = 13.0 mg/KG  
Typical cholinesterase inhibition signs were noted.
- Acute Rat Oral (75% Tech) : Male LD<sub>50</sub> = 21 mg/kg  
Female LD<sub>50</sub> = 18.9 mg/kg
- Acute Rat Oral (6 S) : Male LD<sub>50</sub> = 32.3 mg/KG  
Female LD<sub>50</sub> = 24.1 mg/KG  
Tremors, salivation, dyspnea were noted,
- Acute Mice Oral (95%) : Female LD<sub>50</sub> = 16.2 mg/KG  
Tremors, salivation, dyspnea were noted
- Acute Mice Oral (75%) : Female LD<sub>50</sub> = 18.0 mg/KG  
Tremors, salivation, straub tail, dyspnea and rarely clonic convulsions were noted. No mortality occurred at 15 mg/KG or lower.
- Acute Rabbit Dermal (Tech) : Male LD<sub>50</sub> = 118 mg/KG. No gross pathological changes were noted. Toxic signs noted were miosis, salivation, rhinorrhea, ataxia, and CNS depression.

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Acute Rabbit Dermal (Monitor 6 S) : Male LD<sub>50</sub> = 125 mg/KG. No gross pathological changes were noted. Toxic signs noted were miosis, diarrhea, salivation, rhinorrhea and death.

Acute Rat Inhalation (95%) : An LC<sub>50</sub> value was not established because of the vapor method used. A slight effect was shown by a depression of both the RBC and plasma Ch.E. activity. Exposure was four hours.

Acute Rat Inhalation (Monitor 6 S) (4 hours) : No LC<sub>50</sub> value could be established because no measurement of vapors was made. No mortality or signs of intoxication was noted. A slight to moderate depression of the RBC level of Ch.E. activity was noted.

21 Day Subacute Rabbit Dermal (75% Tech) : Levels tested were 5.0 and 10 mg/KG. Two deaths were noted at high level and one at low level. Deaths were due to cholinergic reactions at the high level. Slight body weight loss was noted at the high level. No adverse findings were noted in hematologic and clinical blood chemistry studies. These findings are difficult to believe due to the dosage levels used.



90 Day Rat Feeding (75% Tech)

:

Levels tested were 0.3, 1.0, 3.0, and 10 ppm. Male showed plasma Ch.E. depression at 3.0 and 10 ppm; females at 10 ppm. RBC Ch.E. depression was noted at 10 ppm. Brain Ch.E. depression was noted at 3.0 and 10 ppm. The no-effect level is approx. 1.0 ppm. Recovery was noted several weeks post treatment.

90 Day Dog Feeding (75% Tech)

:

Levels tested were 0.025, 0.075, and 0.25 mg/KG. No clear-cut or consistent pattern of effects on cholinesterase activity was observed.

21 Day Rat Paired Feeding Study  
(97% Tech) IST # B 6486  
12/22/68

:

Tested at 30 ppm. No body weight loss was indicated. **INVALID**  
12/10/70

Two Year Dog Oral (RE 9006-111,  
SX-116)

:

Levels tested were 0.075, 0.25 and 0.75 mg/KG seven days a week. No mortality was observed. No toxic effects were noted.

Two Year Rat Feeding  
(RE 9006-111, SX-116) (97%)

:

Levels tested were 3.0, 10, and 30 ppm. Body weight loss was observed at 30 ppm (see 21 day rat feeding). The no effect level is greater than 30 ppm.

Three Generation Rat Reproduction Study (75%)

IBT @ 6250 1/16/70

INVALID  
12/10/80

The F1b litters of the 30 ppm level showed increased stillbirths a decrease in viable pups at day five and again at weaning. All test males showed a decreased heart weight. Histopathology on parent animals was negative. The F2a and F2b litters, both test and control showed a higher than normal number of stillbirths. The 5 day survival index for the F2a and F2b litters of the 30 ppm were higher than the control value. A greater than 20% decrease in Ch.E. activity was noted in both sex of the F1b parents. Histopathological examination revealed no adverse finding.

Microsomal Oxidation

Microsomes accelerate the hydrolysis of monitor to O,S-dimethyl phosphorothioate.

Metabolism in the Rat.

Approximately one-half of the dose was excreted within 24 hrs as CO<sub>2</sub> or in the urine.

Neurotoxicity in Chickens (75% Tech):

Neurotoxicity was not exhibited

Antidotal Study

Atropine and or 2-PAM are antidotal.

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Thiono isomer impurity

- Acute Rat Oral (RE 9169) : Male LD<sub>50</sub> = 633 mg/KG  
Female LD<sub>50</sub> = 549 mg/KG  
Death was preceded by signs  
of intoxication associated  
with central nervous system  
depression.
- Acute Rabbit Dermal (RE 9169)  
(SX 198) : LD<sub>50</sub> = ~ 3.5 gm/KG on intact  
skin. LD<sub>50</sub> = 1.57 gm/KG on  
abraded skin. Toxic signs  
were weakening hyporeflexia,  
loss of reflexes and salivation.
- Human Exposure Reports : Sixty-six human contact reports  
with various concentrates did  
not show significant effects.

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SUMMARY

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This chemical exhibits lethal toxicity at low dosage levels and thus must be considered a highly toxic material. The subacute studies indicate the chemical is largely excreted from the body within 24 hours. The portion remaining does exhibit a continuous effect until intake is stopped. Recovery requires from one to three weeks after such a subacute exposure.

A singly or subacute non lethal levels do not produce constant histological changes.