KS-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-diemthyl 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 convience.

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
TOX FILE

RDCoberly/LBDale/ccw
9/18/70

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RES CH SERVICE
PESTICIDES REGULA..ON DIVISION
WASHINGTON, D. C. 20250

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INTERDEPARTMENTAL COORDINATION OF ACTIVITIES RELATING TO PESTICIDES

Referral of Application for Registration under the Federal Insecticide, Fungicide, and Rodenticide Act

1. DATE OF REFERRAL: 3-31-70 wk of 4-3-70

2. FILE SYMBOL/REGISTRATION No.: 239-EGFA

3. DATE OF APPLICATION: 3-18-70

4. NAME & ADDRESS OF APPLICANT OR REGISTRANT

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

5. PRODUCT NAME

ORTHO 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	☐ SAFETY - HUMAN	☐ OTHER:
INITIALS / DATE	INITIALS / DATE	INITIALS / DATE
COMMENTS	COMMENTS	COMMENTS

PR FORM 9-230 REPLACES PR FORM 9-290, PR FORM 9-291.

MONITOR INSECTICIDE

RESIDUE TOLERANCE PETITION

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INERT INGREDIENT INFORMATION IS NOT INCLUDED

FORMULATION

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

ORTHO MONITOR 6 Spray - 6 lb active/gallon.

	lb	Gal
MONITOR insecticide technical [redacted]	8.97	0.8227
	10.60	1.0000

This formulation contains a 10% relative overage 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 65 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.

Methamidophos toxicology review

Page _____ is not included in this copy.

Pages 4 through 7 are not included in this copy.

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

X 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.

RDCoberly/ccw
- 9/18/70

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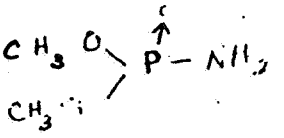
Chemical Name	:	O,S-dimethyl phosphoramidothioate
Trade Name	:	Monitor
Alternate Name	:	RE-9006; ENT. 27396
Structural Formula	:	
Empirical Formula	:	$C_2 H_8 NO_2 PS$
Molecular Weight	:	141.13
Melting Point	:	39-41°C
Density	:	1.31 (melt)
Odor	:	Pungent
Solubility	:	Infinitely miscible with water and alcohol; less than 1% in kerosene; less than 10% in benzene or xylene.
Volatility	:	Low
Vapor Pressure	:	Approx 10^{-4} 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_{50} = 15.6 mg/KG Female LD_{50} = 13.0 mg/KG Typical cholinesterase inhibition signs were noted.
Acute Rat Oral (75% Tech)	:	Male LD_{50} = 21 mg/kg Female LD_{50} = 18.9 mg/kg
Acute Rat Oral (6 S)	:	Male LD_{50} =32.3 mg/KG Female LD_{50} = 24.1 mg/KG Tremors, salivation, dyspnea were noted.
Acute Mice Oral (95%)	:	Female LD_{50} = 16.2 mg/KG Tremors, salivation, dyspnea were noted
Acute Mice Oral (75%)	:	Female LD_{50} = 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_{50} = 118 mg/KG. No gross pathological changes were noted. Toxic signs noted were miosis, salivation, rhinorrhea, ataxia, and CNS depression.

Acute Rabbit Dermal (Monitor 6 S)	:	Male LD_{50} = 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_{50} 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_{50} 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) IBT # B 6486 12|20|68	:	Tested at 30 ppm. No body weight loss was indicated. INVALID 12|10|80
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.

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Three Generation Rat Reproduction Study (75%) IBT # 6255 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_2 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_{50} = 633 mg/KG Female LD_{50} - 549 mg/KG Death was proceeded by signs of intoxication associated with central nervous system depression.
Acute Rabbit Dermal (RE 9169) (SX 198)	:	LD_{50} = ~ 3.5 gm/KG on intact skin. LD_{50} = 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.

SUMMARY

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.