

US EPA ARCHIVE DOCUMENT

Chughtnessy
Number

034001

1
1/14

PM

13, 15, 16
and 21

Reviewer William Sabert JMC

Date 10/19/76 Team

Names: Methoxychlor

2, 2-Bis (p-methoxyphenyl) - 1, 1, 1-trichloroethane 88% and related compound 12%

Marlate

DMDT

Rereg. Category _____ Gaps _____ Call-in _____

Date Published in FR _____ Date Direct Notice _____

SGP's using this worksheet:

Batch	Team	Date assigned	Data Complete

DATA REQUIREMENTS FOR REREGISTRATION

13, 15, 16, and 21

2/15 PM

034001

S #

Reviewer William Robert

RBJ

JMC

ST TYPE	CONDITIONS	L#	TS	CITATION	RESULTS & COMMENTS
toxicology				<p>Oftosis, J. S. 1976. Teratogenic study in rats with ethane, 1,1,1-trichloro-2,2,2-trifluoro-methylol- (Methoxychlor), IN-5099, Medical Research Project No. 2475.</p> <p>Asbell Laboratory Report No. 648-76, submitted by E. I. du Pont de Nemours & Company, Reg. # 352-75, 234, -329, 14/8/75 (226767)</p>	<p>Rats (day 6 thru 15 of gestation) 80%.</p> <ul style="list-style-type: none"> - 26 or 28 rats/litter. - 0, 200, 500, and 1,250 ppm - NEL - 200 ppm - slight body weight loss. - not sign. - 500 and 1,250 ppm - significant decrease in food consumption, body weight loss, and significant increase post-implantation losses.
neurotoxicity				<p>Lee, K. P. 1973, Methoxychlor - Two-year feeding study - mice. MR-1664 - Biochemical Department. Pathology Report # 5-73</p> <p>Asbell Laboratory for Toxicology and Industrial Medicine submitted by E. I. du Pont de Nemours & Co. PP 9FO768 3/25/73 (091323)</p>	<p>Mice (2 years) - BALB/cJ and C3He/FeJ strains (200 mice)</p> <ul style="list-style-type: none"> - 0 and 750 ppm - C3He/FeJ mice - higher incidence of hepatic neoplasms in control & treated - BALB/cJ mice - no sign. increase in testicular tumors. <p>Rats (2 years) - Rodent strain</p> <ul style="list-style-type: none"> - 12 males & 12 females/litter. - 0, 10, 25, 100, 200, 500, & 2000 ppm - NEL - 100 ppm - 200 and 500 ppm - decreased growth - 2000 ppm - mild tumor signs in liver
				<p>Long, E. L. 1973. Review of microlesions from mice and rats treated by dietary administration of methoxychlor. Pesticide Petition 8FO768, EPA, Registration Division, submitted by E. I. du Pont de Nemours & Co. PP 9FO768 3/25/73 (091323)</p>	<p>Mice (2 years) BALB/cJ and C3HeB/FeJ.</p> <ul style="list-style-type: none"> - 0, 750 ppm - C3H3B/FeJ - no sign. increase in tumors or lesions. - BALB/cJ - slightly significant increase in testicular interstitial cell tumor.

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DATA REQUIREMENTS
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RESULTS & COMMENTS

CITATION

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ST TYPE CONDITIONS

isomer
- 16 males and 16 females/conc.
- 0, 200, and 1000 ppm.
- NEL - 200 ppm
- 1000 ppm - markedly reduced body weight curves.
- lower litter size.

Sherman, H., A. L. Miller and J. K. Clayton, Jr. 1966. Three-generation reproduction study on rats with 2,2-bis-(p-methoxyphenyl)-1,1,1-trichloroethane (methoxychlor). Report # 102-66. Haskell Laboratory for Toxicology and Industrial Medicine. Submitted by E. I. du Pont de Nemours & Co. PP 8FO680 6/7/68 (091187)

Rats (2 years) -
- 25 males and 25 females/conc.
- 0, 25, 200 and 1600 ppm
- high mortality - intermittent infection
- NEL - 200 ppm
1600 ppm - sign. reduction in growth rate.
Dogs (1 year) -
- 2 dogs/conc.
- 0, 20, 100, and 300 mg/kg/day
- NEL - 300 mg/kg/day
- no evidence of tissue damage.
- no food histologically.

Hodge, H.C., E.A. Maynard, and H.J. Blanchet, Jr. 1952. Chronic oral toxicity tests of methoxychlor (2,2-bis-(p-methoxyphenyl)-1,1,1-trichloroethane) in rats and dogs. Journal of Pharmacology and Experimental Therapeutics. Volume 104(1): 60-66. University of Rochester School of Medicine and Dentistry. Submitted by E.I. du Pont de Nemours & Co. PP 126 4/22/57 (090156)
Pathology; Rats. Report by H.J. Blanchet, Jr. PP 9FO768 3/25/73 (091323)

reduction
feeding

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DATA REQUIREMENTS FOR REREGISTRATION

Reviewer William Robert
RBJ
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ST TYPE	CONDITIONS	L#	TS	CITATION	RESULTS & COMMENTS
inhalation acute oral				<p>Hodge, H.C., E. A. Maynard, J. F. Thomas, H. J. Blanchet, Jr., H. S. Witt, Jr. and K. E. Moore, 1950. Short-term oral toxicity tests of methoxychlor (2,2-dichloro-1,1-trichloroethane) in rats and dogs. Journal of Pharmacology and Experimental Therapeutics 99(1): 140-148.</p> <p>Submitted by du Pont Company, Reg. # 352 - General 5/23/57 (002708)</p>	<p>Rats - 9 gm/100 cc of corn oil (estimated) - 10-15 rats/conc. (Technical) - 2.87, 4.62 and 5.82 g/kg (birds) 1050 - 5.0 g/kg (72 hours); (purified) - 2.98, 4.07, and 5.82 g/kg (mice) 1050 - 5.0 g/kg (5 days) - heavy mortality on last days of both studies.</p>
inhalation acute oral				<p>Hill, E. F., R. S. Heath, J. W. Sparr, and J. D. Williams, 1975. Lethal dietary toxicities of environmental pollutants to birds. U.S. Field and Wildlife Service, Special Scientific Report - Wildlife No. 191. 61 p.</p>	<p>Bobwhite Quail (8-days) technical - 7 birds/conc. - 2 conc. LC50 > 5000 ppm - no mortality Japanese Quail (8-days) technical - 12 birds/conc. - 3 conc. LC50 > 5000 ppm - no mortality Ring-necked Pheasant (8 days) technical - 5 birds/conc.; 3 conc. LC50 > 5000 ppm - no mortality Mallard Ducks (8-days) technical - 10 birds/conc.; 3 conc. LC50 > 5000 ppm - no mortality</p>

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DATA REQUIREMENTS FOR REREGISTRATION

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Methoxychlor Technical

TEST TYPE	CONDITIONS	L#	TS	CITATION	RESULTS & COMMENTS
mutic (6-Ann) LC50 ial				Macek, K.J., C. Hutchinson, and O.B. Cope: 1969. The effects of temperature on the susceptibility of bluegills and rainbow trout to selected pesticides. Bulletin of Environmental Contamination and Toxicology 4(3): 174-183.	<p>Bluegills - test. in acetone:</p> <ul style="list-style-type: none"> -20 fish/conc. 24-hr LC50: -12.7°C - 58 ppb (52-64) -18.3°C - 67 ppb (60-74) -23.8°C - 83 ppb (77-90) 96-hr LC50: <p>Rainbow Trout - test. in acetone:</p> <ul style="list-style-type: none"> -20 fish/conc. 24-hr LC50: -1.6°C - 55 ppb (50-60) -7.2°C - 45 ppb (41-49) -12.7°C - 74 ppb (66-82) 96-hr LC50: -1.6°C - 30 ppb (28-32) -7.2°C - 42 ppb (38-45) -12.7°C - 62 ppb (57-67)

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DATA REQUIREMENTS
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RESULTS & COMMENTS

CITATION

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ST TYPE CONDITIONS

aquatic 16-hr) LC50			Katy, M. 1961. Acute toxicity of some organic insecticides to three species of salmonids and to the three-year steelhead, Transactions of the American Fisheries Society Volume 90(3): 264-268,	Rainbow Trout - in acetone - 20°C - 10 to 20 µl/l conc. in critical range; 5 µl/l conc. in critical mortality conc. (pre-test) 24-hr LC50 - 0.062.6 ppm. Clinock Salmon - same procedure 24-hr LC50 - 0.028 ppm 18-hr LC50 - 0.0279 ppm Coho Salmon - same procedure 24-hr LC50 - 0.0662 ppm

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DATA REQUIREMENTS FOR REREGISTRATION

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ST TYPE	CONDITIONS	L#	TS	CITATION	RESULTS & COMMENTS
invertebrate (6-h) LC50 estuarine fish)				Eisler, R. 1970, Acute toxicities of organo-chlorine and organophosphorus insecticides to estuarine fishes. U.S. Bureau of Sport Fisheries and Wildlife, Technical Papers 45. 12p.	American silver-side - ^{total} in acetone, 20°C <u>M. menidia</u> - 10 fish/conc. (50) - minimum of 5 conc. 24- and 48-h LC50 - 0.044 ppm 96-h LC50 - 0.033 ppm. <u>Bluehead (Thalassoma bifasciatum)</u> - 5 fish/conc.; min. 5 conc. - 24-h LC50 0.014 ppm 48-h 96-h LC50 - 0.013 ppm <u>Striped killifish - (Fundulus majalis)</u> - 8 to 10 fish/conc.; min. 5 conc. - 24-h LC50 - 0.038 ppm 48-h LC50 - 0.034 ppm 96-h LC50 - 0.030 ppm <u>Striped mullet (Mugil cephalus)</u> - 6 to 10 fish/conc. (45); min. 5 conc. 24-, 48- and 96-h LC50 0.063 ppm
vertebrate				Eisler, R. 1969, Acute toxicities of insecticides to marine decapod crustaceans, Crustaceana 16(3): 302 - 310.	Sand shrimp (<u>Crangon septemspinosa</u>) - 35 shrimp; 5 conc. min. 96-h LC50 - 0.004 ppm Shore shrimp (<u>Palaemonetes vulgaris</u>) - 60 shrimp; 5 conc. min. 96-h LC50 - 0.012 ppm Hermit Crab (<u>Pagurus longicarpus</u>) - 40 crabs; 5 conc. min. - 96-h LC50 0.007 ppm

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ST TYPE	CONDITIONS	L#	TS	CITATION	RESULTS & COMMENTS
water (6-hrs) LC50				<p>Henderson, C., G. H. Pickering and C. M. Tanswell, 1959. The relative toxicity of ten chlorinated hydrocarbon insecticides to four species of fish. <i>Transactions of the American Fisheries Society</i>, Vol. 88(1): 23-32.</p> <p>Copy of paper presented to 48th Annual Meeting of American Fisheries Society (109059)</p> <p>Bridges, W. R. and A. K. Andrews, 1963. <i>Toxicant tolerance</i>. In: Cope, O. B., Sport fishing investigations, U.S. Fish and Wildlife Service, Circ. 167. p. 37</p> <p>NS 0505-9 4/12/68 (130343)</p> <p>Kennedy, H. D., L. L. Eller, and D. F. Hatal, 1970. Chronic effects of methoxychlor on bluegills and aquatic invertebrates. U.S. Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife, Technical Papers 53, 18p. (127976)</p>	<p>Bluegills - 100% mortality at 25°C. - 10 fish/conc. in acetone</p> <p>Logarithmic series of conc.</p> <p>24-hr. LC50 0.066ppm, 48-hr. LC50 0.062ppm, 96-hr. LC50 0.062ppm.</p> <p>Fatheads - 24 / 48h / 96h, LC50 0.066ppm, 0.064 ppm, 0.064ppm</p> <p>Goldfish - 0.120ppm, 0.086 ppm, 0.056ppm</p> <p>Bluegills - 0.24ppm, 0.125ppm, 0.120ppm</p> <p>Rainbow Trout - (tech.) 55°F</p> <p>24-hr. LC50 - 0.020ppm, no data</p> <p>Bluegills - 3 ponds (13 weeks) - 0, 0.01 and 0.04ppm - no significant difference in fish growth. - uptake for 0.04ppm - 21ppm (3 days) - mortality or sterility by 56 days. - sign. higher insect populations</p>

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ST TYPE	CONDITIONS	L#	TS	CITATION	RESULTS & COMMENTS
acute oral				<p>Tullner, W. W. and J. H. Elgeromb, 1962. Cystic tubular nephropathy and decrease in testicular weight in rats following oral methoxychlor treatment. <i>Journal of Pharmacology and Experimental Therapeutics</i>, Vol. 138 (1): 126 - 130. Accession # 106561. NCI</p>	<p>Rats - (33-55 days) - technical - 5 males / conc / treatment - 0 and 1% basic diet - histopathologic changes were found in the testes and kidneys of all animals fed methoxychlor for 23 to 55 days. - abnormal seminiferous tubules - no spermatozoa in tubular lumen; no spermatogenesis. - few & atypical spermatozoa - kidney - many small cystic tubules</p>
				<p>Tullner, W. W. 1961. Uterotrophic action of the insecticide methoxychlor. <i>Science</i> Vol. 133 (3453): 647 - 648. (106562)</p>	<p>Rats - (3 days) Tech. in sesame oil - 10 females / conc.; oral. - 0 and 20.0 mg total dose, treatment - ovariectomy plus abdominal or hysterectomy - both groups on methoxychlor had sign. higher uterine weight. Mice - (3 days) Tech. in sesame oil - 9 or 10 females / conc.; or. - 0, 0.5, 1.0, and 5.0 mg (total) treatment - ovariectomy - increase in uterine weight (dose related)</p>

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PM [9/15 and 13/15/6]

FORMULATION/JSI - HAZARD PROFILE

FORMULATION:

Technical

KEY USES:

FOOD

ENCLOSED WORK SP.

TEST TYPE	TEST RESULT	TOX. CAT.	DATA CITATION	TEST DESCRIPTION & SIGNIFICANT COMMENT
Oral	Rats - LC50 (males) - 5.0 g/kg (females) - 5.0 g/kg.	III	Hodge, H.C., E.A. Maynard, J.F. Thomas, H.J. Blandet, Jr., N.Y. Ailt, Jr. and K.E. Mason, 1950. Short-term oral toxicity tests of methoxychlor (2,2-di-(p-methoxyphenyl)-1,1,1-trichloroethane) in rats and dogs. Journal of Pharmacology and Experimental Therapeutics 99(1):140-148, Submitted by E.I. du Pont de Nemours Reg # 352-General 5/23/57 (002708)	Rats - untreated (9 g/100 cc of corn oil) - 10 to 15 rats/conc. purified - 2.98, 4.07 and 5.82 g/kg males - (observed 5 days) technical - 2.87, 4.62, and 5.95 g/kg females - (observed 3 days) - heavy mortality on last days of both studies.

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Reg. 100-a

Methoxychlor 50 WP

KEY USES: FOOD _____ ENCLOSED WORK SP. _____

FORMULATION:

TEST TYPE	TEST RESULT	TOX. CAT.	DATA CITATION	TEST DESCRIPTION & SIGNIFICANT COMMENT
acute inhalation			Bray, R. S., Jr., and W. Woodard, 1962. Acute inhalation toxicity, Woodard Research Corporation, Submitted by Reigay Agricultural Chemical Reg. 100-a 3/14/62 (130637)	Rate (1 hour) - aerosol dust - nostrils only - 9 rats at 2.6 mg/l (14 days) no mortality - normal after 24 hours.

S #

PM 13

FORMULATION/USE - HAZARD PROFILE

Reg. # 3770-111

FORMULATION: Economy Mal-Thox Dust

5.0% 034001 Methoxychlor
4.0% 057701 Malathion

KEY USES:

FOOD

ENCLOSED WORK SP.

TEST TYPE	TEST RESULT	TOX. CAT.	DATA CITATION	TEST DESCRIPTION & SIGNIFICANT COMMENTS
Acute Oral	Rat LD50 ≥ 1.5 g/kg	III	Teters, W.R. 1972. Oral toxicity in rats - Mal-Thox Dust. LD. # 104151. E.P.A., T.S.D., C.B.I.B., Pharmacology Laboratory Toxicity Report. Reg. # 3770-111 11/16/72 (050537)	Rate - 20% aqueous solution (7 days) - 2 males and 2 females - 7.5 ml/kg (1.5 g/kg formulation) - no mortality

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DATA REQUIREMENTS FOR REREGISTRATION

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PM

Reg. # 239-987
Orthocide 75 Seed Protectant M
3.0% 034001 Methoxychlor
75.0% 081301 Cyfluthrin

RESULTS & COMMENTS

CITATION

L# TS

T TYPE CONDITIONS

aquatic
(o-born)
C50

McCann, J. 1971. Rainbow Trout -
Orthocide Methoxychlor 75-3, ABL # 426.
EPA, T.S.D., C.B. I.B., Animal Biology
Laboratory,
Reg. 239-987 4/22/71 (108542)

Rainbow Trout - 550F
- 20 fish/scene
- 0.1, 0.135, 0.18, 0.24, 0.32,
and 0.42 ppm. (0.88 ppm)
- 24-h LC50 - 0.162 ppm (162 ppb)
- 48-h LC50 - 0.146 ppm
- 96-h LC50 - 0.132 ppm.

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15

FORMULATION/USE: - HAZARD PROFILE

Reg. # 100-472

FORMULATION: Geigy Alkator,

63.0% 006501 Petroleum Distillate
 24.8% 034001 Petrolnaphth
 10.3% 057801 Diagonin,

FOOD

ENCLOSED WORK SP.

KEY USES:

TEST TYPE	TEST RESULT	TOX. CAT.	DATA CITATION	TEST DESCRIPTION & SIGNIFICANT COMMENTS
Acute Oral	Rate - LD ₅₀ 2.0 g/kg	III	Colombro, J. C., 1965, Acute toxicity studies on Alkator, Industrial Bio-Test Laboratories, Inc. Submitted by Geigy Chemical Corp. Reg. 100-472 8/6/65 (102618)	Rate - undiluted - intubation (14 days) - 4 rats/conc., (2 males and 2 females) - 1.4, 2.0, 3.0, and 4.6 g/kg - 2.0 g/kg - 3/4 dilution - no significant gross pathology.
Acute Dermal	Rabbits - LD ₅₀ 8.0 g/kg	III		Rabbits - undiluted (24 hours) (14 days) - 4 males and 4 females/conc. - 2.0, 3.0, 4.6, 6.8, 10.2, and 15.4 g/kg. - moderate erythema and edema.
Acute Inhalation	Rate - LC ₅₀ > 177 mg/l < 36.5 mg/l	III		Rate - aerosol - undiluted (4 hours) (14 days) - 5 males and 5 females/conc. - 36.5 mg/l (calculated) - 6/10 died 1.25% (V) - no effect on body weight - aerosol sol. aerosol - 177 mg/l, - no mortality; no gross pathology
Eye Irritation	Rabbits - moderately irritating.	II		Rabbits - 0.1 ml undiluted (7 days) 5 rabbits - - corneal opacity reversed by 96 hours.
Dermal Irritation	Rabbits - moderately irritating.	II		Rabbits - 0.15 ml undiluted (74 hours) (72 days) - 4 rabbits - moderate to severe erythema & edema.

FORMULATION:

Geigy Alfator

Reg. # 100-472

63.0 %

006501

Petroleum Distillates

24.8 %

034001

Methoxychlor

10.3 %

057801

Diagnon

KEY USES:

FOOD

ENCLOSED WORK SP.

TEST TYPE	TEST RESULT	TOX. CAT.	DATA CITATION	TEST DESCRIPTION & SIGNIFICANT COMMENTS
Acute Dermal	Rabbits		Calandra, J.C. 1966. 21-Day subacute dermal toxicity of Alfator, Industrial Bio-Laboratories, Inc. Submitted by Geigy Agricultural Chemical Reg. # 100-472 6/2/66 (102617)	Rabbits - (21-days) - undiluted (7hrs/day) 5 days - five males and five females/serum, structures - 0.8 g/kg/day and 1.6 g/kg/day - abraded and intact - control - no mortality - 0.8 g/kg/day - intact - 6/10 died - slight to moderate body weight effects - 0.6 g/kg/day - intact - 8/10 died - abraded - 9/10 died - moderate to severe body weight effects, - diarrhea after one application - all animals - salivation and fibrillary action after 6 and 7 applications - severe erythema and moderate drying peeling & bleeding and desquamation after 4 to 6 appls. - no significant gross or microscopic pathologic alterations.