From: "Caroline Cox"
To: <coshita@oehha.ca.gov>
Date: 5/5/2009 1:22 PM
Subject: Prioritization of Chemicals for Carcinogen Identification Committee Review: Proposed Chemicals for Committee Consideration and Consultation March 2009
Attachments: RTECS triethanolamine.pdf; RTECS dicofol.pdf; RTECS methoxychlor.pdf; RTECS PFOA.pdf

Cynthia Oshita
Office of Environmental Health Hazard Assessment
Proposition 65 Implementation
P.O. Box 4010 1001 I Street, 19th floor
Sacramento, California 95812-4010

Dear Cynthia Oshita:

The Center for Environmental Health is a nonprofit organization in Oakland whose mission is to protect people from toxic chemicals. We have found that Proposition 65 is a powerful tool to accomplish this goal and we therefore support adding new chemicals to the list of chemicals known to the State to cause cancer or reproductive toxicity.

As the Carcinogen Identification Committee evaluates candidate chemicals for their ability to cause cancer, we think that it is important for the committee to have all available relevant data. I therefore am attaching information from the National Institute for Occupational Safety and Health's RTECS database about the mutagenicity of dicofol, methoxychlor, perfluorooctanoic acid, and triethanolamine. These are chemicals for which the summary document prepared for the May 29, 2009 meeting indicated that no genotoxicity studies were available.

Thank you for the opportunity to participate in the work of the CIC.

Sincerely,

Caroline Cox

Center for Environmental Health
2201 Broadway, Suite 302
Oakland, CA 94612-3017

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The Registry of Toxic Effects of Chemical Substances

Ethane, 1,1,1 - trichloro - 2,2 - bis (p - methoxyphenyl) -

RTECS #: KJ3675000

CAS #: 72-43-5

UPDATE: November 2008	MW: 345.66	MF: $C_{16}H_{15}Cl_3O_2$

NOTE:

- **TOXICITY DATA HAVE NOT BEEN EVALUATED. OMISSION OF A SUBSTANCE OR NOTATION DOES NOT IMPLY ANY RELIEF FROM REGULATORY RESPONSIBILITY.**

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SYNONYMS:

1. 1,1' - (2,2,2 - Trichloroethylidene) bis (4 - methoxybenzene)
2. 1,1,1 - Trichlor - 2,2 - bis (4 - methoxy - phenyl) - aethan (German)
3. 1,1,1 - Trichloro - 2,2 - bis (4 - methoxyphenyl) ethane
4. 1,1,1 - Trichloro - 2,2 - bis (p - anisyl) ethane
5. 1,1,1 - Trichloro - 2,2 - bis (p - methoxyphenyl) ethane
6. 1,1,1 - Trichloro - 2,2 - di (4 - methoxyphenyl) ethane
7. 1,1 - Bis (p - methoxyphenyl) - 2,2,2 - trichloroethane
8. 2,2,2 - Trichloro - 1,1 - bis (4 - methoxyphenyl) ethane
9. 2,2 - Bis (4 - methoxyphenyl) - 1,1,1 - trichloroethane
10. 2,2 - Bis (p - anisyl) - 1,1,1 - trichloroethane
11. 2,2 - Bis (p - methoxyphenyl) - 1,1,1 - trichloroethane
12. 2,2 - Di - (p - methoxyphenyl) - 1,1,1 - trichloroethane
13. 2,2 - Di - p - anisyl - 1,1,1 - trichloroethane
14. 4,4 - (2,2,2 - Trichloroethylidene) dianisole
15. Benzene, 1,1' - (2,2,2 - trichloroethylidene) bis (4 - methoxy -
16. DMDT
17. Di (p - methoxyphenyl) - trichloromethyl methane
18. Dianisyltrichlorethane
19. Dimethoxy - DDT
20. ENT 1,716
21. Ethane, 2,2 - bis (p - anisyl) - 1,1,1 - trichloro -
22. Higalmetox
23. Marlate
24. Methoxcide
25. Methoxy - DDT
26. Methoxychlor
27. Methoxychlor (ACGIH:OSHA)
28. Methoxychlor 2 EC
29. Methoxychlor technical
30. Metoksychlor (Polish)
31. Metox
32. Mezox K
33. Moxie
34. NCI - C00497
35. OMS 466
36. RCRA waste number U247
37. p,p' - Dimethoxydiphenyltrichloroethane
38. p,p' - Dwumetoksydwufenylotrojchloroetan (Polish)
39. p,p' - Methoxychlor

SKIN AND EYE IRRITATION DATA AND REFERENCES:

ROUTE/ ORGANISM	DOSE	EFFECT	REFERENCE
N/R	N/R	N/R	N/R

MUTATION DATA AND REFERENCES:

SYSTEM TEST	ROUTE/ ORGANISM/ TISSUE	DOSE	REFERENCE
cytogenetic analysis	intraperitoneal hamster	50 mg/kg	ARTODN 58,152,1986
cytogenetic analysis	oral mouse	6 mg/kg/50 day- intermittent	FOMOAJ 35,361,1976
DNA damage	rat liver	150 µmol/L	EMMUEG 24,181,1994
mutation in microorganisms	mouse lymphocyte	10 mg/L (+enzymatic activation step)	EMMUEG 12(Suppl 13),103,1988
micronucleus test	subcutaneous mouse	49.5 mg/kg/3 day- intermittent	REPTED 17,79,2003
morphological transform	hamster embryo	10 mg/L	MUREAV 356,85,1996
morphological transform	mouse fibroblast	2 mg/L	JJIND8 67,1303,1981
sperm morphology	oral rat	28 gm/kg/10 week- continuous	PSEBAA 176,187,1984

REPRODUCTIVE EFFECTS DATA AND REFERENCES:

ROUTE/ ORGANISM	DOSE	EFFECT	REFERENCE
intraperitoneal mouse	lowest published toxic dose: 800 mg/kg (1 day pregnant)	Reproductive: Effects on fertility: Pre- implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea) Reproductive: Effects on embryo or fetus: Fetotoxicity (except death, e.g., stunted fetus)	REPTED 11,703,1997
oral mammal (species unspecified)	lowest published toxic dose: 100 mg/kg (1 day pregnant-28 day after birth)	Reproductive: Effects on newborn: Biochemical and metabolic Reproductive: Effects on newborn: Physical	NETEEC 28,103,2006
oral mouse	lowest published toxic dose: 1 gm/kg (20 day pregnant)	Reproductive: Maternal effects: Ovaries, fallopian tubes	REPTED 5,139,1991

oral mouse	lowest published toxic dose: 900 mg/kg (6-8 day pregnant)	Reproductive: Maternal effects: Uterus, cervix, vagina	REPTED 6,431,1992
oral mouse	lowest published toxic dose: 2 gm/kg (6-15 day pregnant)	Reproductive: Maternal effects: Parturition	REPTED 6,431,1992
oral mouse	lowest published toxic dose: 3 gm/kg (6-15 day pregnant)	Reproductive: Effects on embryo or fetus: Fetal death	REPTED 6,431,1992
oral mouse	lowest published toxic dose: 2,000 mg/kg (6-15 day pregnant)	Reproductive: Specific developmental abnormalities: Urogenital system	HBPTO* 1,733,2001
oral mouse	lowest published toxic dose: 140 µg/kg (11-17 day pregnant)	Reproductive: Maternal effects: Postpartum Reproductive: Other effects on female Reproductive: Effects on newborn: Behavioral	NETEEC 24,55,2002
oral mouse	lowest published toxic dose: 0.14 mg/kg (11-17 day pregnant)	Reproductive: Other effects on female Reproductive: Effects on newborn: Behavioral Reproductive: Effects on newborn: Physical	NETEEC 24,55,2002
oral rat	lowest published toxic dose: 66 gm/kg (33 day male)	Reproductive: Paternal effects: Testes, epididymis, sperm duct Reproductive: Paternal effects: Prostate, seminal vesicle, Cowper's gland, accessory glands	JPETAB 138,126,1962
oral rat	lowest published toxic dose: 2 gm/kg (6-15 day pregnant)	Reproductive: Effects on fertility: Post- implantation mortality (e.g., dead and/or resorbed implants per total number of implants) Reproductive: Effects on fertility: Litter size (e.g., # fetuses per litter; measured before birth) Reproductive: Effects on embryo or fetus: Fetotoxicity (except death, e.g., stunted fetus)	TXAPA9 45,435,1978
oral rat	lowest published toxic dose: 2 gm/kg (6-15 day pregnant)	Reproductive: Specific developmental abnormalities: Musculoskeletal system	TXAPA9 45,435,1978

oral rat	lowest published toxic dose: 4,250 mg/kg (42 day prior to copulation-21 day after birth)	Reproductive: Maternal effects: Ovaries, fallopian tubes Reproductive: Effects on newborn: Physical Reproductive: Effects on newborn: Delayed effects	JAFCAU 22,969,1974
oral rat	lowest published toxic dose: 10,625 mg/kg (42 day prior to copulation-21 day after birth)	Reproductive: Maternal effects: Uterus, cervix, vagina Reproductive: Effects on fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles) Reproductive: Effects on fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated)	JAFCAU 22,969,1974
oral rat	lowest published toxic dose: 9,800 mg/kg (multigeneration)	Reproductive: Paternal effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count) Reproductive: Paternal effects: Testes, epididymis, sperm duct Reproductive: Paternal effects: Prostate, seminal vesicle, Cowper's gland, accessory glands	TOXID9 15,164,1995
oral rat	lowest published toxic dose: 50,400 mg/kg (multigeneration)	Reproductive: Maternal effects: Uterus, cervix, vagina Reproductive: Effects on fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated)	TOXID9 15,164,1995
oral rat	lowest published toxic dose: 12,600 mg/kg (multigeneration)	Reproductive: Maternal effects: Ovaries, fallopian tubes Reproductive: Effects on fertility: Litter size (e.g., # fetuses per litter; measured before birth)	TOXID9 15,164,1995

oral rat	lowest published toxic dose: 210 mg/kg (14-20 day pregnant)	Reproductive: Effects on newborn: Growth statistics (e.g., reduced weight gain)	ENVRAL 18,437,1979
oral rat	lowest published toxic dose: 1,600 mg/kg (1-8 day pregnant)	Reproductive: Effects on fertility: Pre- implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea)	TXAPA9 97,454,1989
oral rat	lowest published toxic dose: 600 mg/kg (1-3 day pregnant)	Reproductive: Effects on fertility: Pre- implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea) Reproductive: Effects on fertility: Post- implantation mortality (e.g., dead and/or resorbed implants per total number of implants)	TXAPA9 97,454,1989
oral rat	lowest published toxic dose: 1,000 mg/kg (4-8 day pregnant)	Reproductive: Effects on fertility: Post- implantation mortality (e.g., dead and/or resorbed implants per total number of implants)	TXAPA9 97,454,1989
oral rat	lowest published toxic dose: 2,150 mg/kg (0-22 day pregnant/21 day after birth)	Reproductive: Specific developmental abnormalities: Urogenital system	HBPTO* 2,1340,2001
oral rat	lowest published toxic dose: 18 gm/kg (14 day prior to copulation/0-22 day pregnant)	Reproductive: Effects on fertility: Pre- implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea)	HBPTO* 2,1340,2001
oral rat	lowest published toxic dose: 2,000 mg/kg (6-15 day pregnant)	Reproductive: Effects on fertility: Litter size (e.g., # fetuses per litter; measured before birth) Reproductive: Effects on embryo or fetus: Fetotoxicity (except death, e.g., stunted fetus)	HBPTO* 2,1340,2001
oral rat	lowest published toxic dose: 400 mg/kg (1-2 day pregnant)	Reproductive: Other effects to embryo or fetus	TXAPA9 102,110,1990
oral rat	lowest published toxic dose: 300 mg/kg (1-3 day pregnant)	Reproductive: Other effects to embryo or fetus	TXAPA9 102,110,1990
oral rat	lowest published toxic dose: 10.8 gm/kg (43 day male/43	Reproductive: Effects on newborn: Viability index (e.g., # alive at day 4	FAATDF 12,92,1989

	day prior to copulation-1 day after birth)	per # born alive)	
oral rat	lowest published toxic dose: 11.2 gm/kg (43 day male/43 day prior to copulation-5 day after birth)	Reproductive: Effects on fertility: Pre- implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea)	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 12.6 gm/kg (6 week prior to copulation)	Reproductive: Effects on fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles) Reproductive: Effects on newborn: Live birth index (Litter size (e.g., # fetuses per litter; measured after birth) Reproductive: Effects on newborn: Physical	JAFCAU 22,969,1974
oral rat	lowest published toxic dose: 23.8 gm/kg (73 day prior to copulation-25 day after birth)	Reproductive: Effects on fertility: Pre- implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea)	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 5.4 gm/kg (43 day male/43 day prior to copulation-1 day after birth)	Reproductive: Effects on newborn: Growth statistics (e.g., reduced weight gain)	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 6.6 gm/kg (43 day male/43 day prior to copulation-25 day after birth)	Reproductive: Specific developmental abnormalities: Hepatobiliary system Reproductive: Specific developmental abnormalities: Endocrine system Reproductive: Specific developmental abnormalities: Urogenital system	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 6.6 gm/kg (43 day male/43 day prior to copulation-25 day after birth)	Reproductive: Effects on newborn: Physical Reproductive: Effects on newborn: Delayed effects	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 4,250 mg/kg (6 week prior to copulation-21 day after birth)	Reproductive: Effects on fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles)	JAFCAU 22,969,1974

		Reproductive: Effects on newborn: Live birth index (Litter size (e.g., # fetuses per litter; measured after birth)	
oral rat	lowest published toxic dose: 50 mg/kg (multigenerations)	Reproductive: Effects on newborn: Physical Reproductive: Effects on newborn: Live birth index (Litter size (e.g., # fetuses per litter; measured after birth)	JAFCAU 22,969,1974
oral rat	lowest published toxic dose: 7,300 mg/kg (73 day prior to copulation)	Reproductive: Effects on fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated)	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 8,000 mg/kg (6 week prior to copulation/22 day pregnant)	Reproductive: Effects on newborn: Live birth index (Litter size (e.g., # fetuses per litter; measured after birth) Reproductive: Effects on fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles)	JAFCAU 22,969,1974
oral rat	lowest published toxic dose: 8,600 mg/kg (43 day male/43 day prior to copulation)	Reproductive: Effects on fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated)	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 8,750 mg/kg (5 week prior to copulation)	Reproductive: Effects on fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles)	JAFCAU 22,969,1974
oral rat	lowest published toxic dose: 9,500 mg/kg (73 day prior to copulation-1 day after birth)	Reproductive: Effects on newborn: Viability index (e.g., # alive at day 4 per # born alive) Reproductive: Effects on newborn: Growth statistics (e.g., reduced weight gain)	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 1,720 mg/kg (1-22 day pregnant/21 day after birth)	Reproductive: Specific developmental abnormalities: Immune and reticuloendothelial system	TXCYAC 172,205,2002

oral rat	lowest published toxic dose: 216 mg/kg (15-21 day pregnant/10 day after birth)	Reproductive: Specific developmental abnormalities: Endocrine system	TOXID9 72,77,2003
oral rat	lowest published toxic dose: 1,080 mg/kg (15-21 day pregnant/10 day after birth)	Reproductive: Specific developmental abnormalities: Urogenital system	TOXID9 72,77,2003
oral rat	lowest published toxic dose: 2,458 mg/kg (7-22 day pregnant)	Reproductive: Effects on newborn: Growth statistics (e.g., reduced weight gain)	TOLED5 135,199,2002
oral rat	lowest published toxic dose: 3,072 mg/kg (7-22 day pregnant/4-7 day after birth)	Reproductive: Specific developmental abnormalities: Endocrine system	TOLED5 135,199,2002
oral rat	lowest published toxic dose: 1,760 mg/kg (1-22 day pregnant/22 day after birth)	Reproductive: Other effects on female Reproductive: Specific developmental abnormalities: Urogenital system Reproductive: Effects on newborn: Delayed effects	TOSCF2 66,91,2002
oral rat	lowest published toxic dose: 1,760 mg/kg (1-22 day pregnant/22 day after birth)	Reproductive: Effects on newborn: Biochemical and metabolic Reproductive: Effects on newborn: Delayed effects	ETOPFR 18,161,2004
oral rat	lowest published toxic dose: 330 mg/kg (7-21 day pregnant/51 day after birth)	Reproductive: Other effects on female Reproductive: Specific developmental abnormalities: Immune and reticuloendothelial system	TXCYAC 207,271,2005
oral rat	lowest published toxic dose: 280 mg/kg (7 day male)	Reproductive: Paternal effects: Testes, epididymis, sperm duct Reproductive: Other effects on male	TOXID9 78,188,2004
oral rat	lowest published toxic dose: 1,400 mg/kg (7 day male)	Reproductive: Paternal effects: Testes, epididymis, sperm duct Reproductive: Paternal effects: Prostate, seminal vesicle, Cowper's gland, accessory glands Reproductive: Other effects on male	TOXID9 78,188,2004
oral rat	lowest published toxic dose: 216 mg/kg (15-22 day pregnant/10 day after birth)	Reproductive: Specific developmental abnormalities: Endocrine system Reproductive: Specific developmental	ARTODN 78,232,2004

		abnormalities: Urogenital system Reproductive: Effects on newborn: Delayed effects	
oral rat	lowest published toxic dose: 46.5 mg/kg (7 day pregnant-77 day after birth)	Reproductive: Effects on newborn: Biochemical and metabolic Reproductive: Effects on newborn: Other postnatal measures or effects Reproductive: Effects on newborn: Delayed effects	TOXID9 60,29,2001
oral rat	lowest published toxic dose: 1,720 mg/kg (multigeneration)	Reproductive: Specific developmental abnormalities: Urogenital system	TOXID9 66,299,2002
oral rat	lowest published toxic dose: 1 gm/kg (11-20 day pregnant)	Reproductive: Effects on embryo or fetus: Fetotoxicity (except death, e.g., stunted fetus) Reproductive: Specific developmental abnormalities: Endocrine system Reproductive: Specific developmental abnormalities: Urogenital system	TOXID9 90,82,2006
oral rat	lowest published toxic dose: 1,720 mg/kg (1-22 day pregnant/21 day after birth)	Reproductive: Specific developmental abnormalities: Urogenital system Reproductive: Effects on newborn: Growth statistics (e.g., reduced weight gain) Reproductive: Effects on newborn: Biochemical and metabolic	TOXID9 90,238,2006
oral rat	lowest published toxic dose: 50 mg/kg (multigeneration)	Reproductive: Specific developmental abnormalities: Immune and reticuloendothelial system Reproductive: Effects on newborn: Growth statistics (e.g., reduced weight gain)	NTPTR* NTR-MG96004
oral rat	lowest published toxic dose: 0.5 mg/kg (multigeneration)	Reproductive: Specific developmental abnormalities: Hepatobiliary system Reproductive: Specific developmental abnormalities: Blood and lymphatic systems (including spleen and marrow)	NTPTR* NTR-MG96004

oral rat	lowest published toxic dose: 0.55 mg/kg (multigeneration)	Reproductive: Specific developmental abnormalities: Blood and lymphatic systems (including spleen and marrow)	NTPTR* NTR-MG96004
oral rat	lowest published toxic dose: 5 mg/kg (multigeneration)	Reproductive: Specific developmental abnormalities: Endocrine system	NTPTR* NTR-MG96004
oral rat	lowest published toxic dose: 39 mg/kg (7 day pregnant-64 day after birth)	Reproductive: Effects on newborn: Biochemical and metabolic	TXCYAC 211,207,2005
oral rat	lowest published toxic dose: 216 mg/kg (15 day pregnant-10 day after birth)	Reproductive: Effects on newborn: Biochemical and metabolic	TXAPA9 208,127,2005
oral rat	lowest published toxic dose: 40 mg/kg (multigeneration)	Reproductive: Effects on newborn: Physical	TOSCF2 91,93,2006
oral rabbit	lowest published toxic dose: 330 mg/kg (6-27 day pregnant)	Reproductive: Other effects on female Reproductive: Specific developmental abnormalities: Musculoskeletal system	CGANE7 39,190,1999
subcutaneous mouse	lowest published toxic dose: 99 mg/kg (5-7 day pregnant)	Reproductive: Effects on newborn: Biochemical and metabolic Reproductive: Effects on newborn: Behavioral	REPTED 13,405,1999
subcutaneous mouse	lowest published toxic dose: 99 mg/kg (5-7 day pregnant)	Reproductive: Effects on fertility: Other measures of fertility Reproductive: Specific developmental abnormalities: Endocrine system Reproductive: Effects on newborn: Behavioral	NETEEC 24,29,2002
subcutaneous mouse	lowest published toxic dose: 49.5 mg/kg (2-4 day pregnant)	Reproductive: Effects on embryo or fetus: Fetotoxicity (except death, e.g., stunted fetus)	REPTED 17,79,2003
subcutaneous mouse	lowest published toxic dose: 99 mg/kg (2-4 day pregnant)	Reproductive: Effects on fertility: Other measures of fertility	REPTED 17,79,2003
subcutaneous mouse	lowest published toxic dose: 0.7 µg/kg (12-18 day pregnant)	Reproductive: Specific developmental abnormalities: Urogenital system Reproductive: Effects on newborn: Delayed effects	TXAPA9 183,10,2002
subcutaneous mouse	lowest published toxic dose: 99 mg/kg (5-7 day pregnant)	Reproductive: Effects on fertility: Litter size (e.g., # fetuses per litter; measured before birth)	NETEEC 24,29,2002

		Reproductive: Specific developmental abnormalities: Endocrine system Reproductive: Effects on newborn: Behavioral	
subcutaneous mouse	lowest published toxic dose: 500.1 mg/kg (2-4 day pregnant)	Reproductive: Effects on fertility: Litter size (e.g., # fetuses per litter; measured before birth) Reproductive: Effects on newborn: Physical	REPTED 18,103,2004
subcutaneous mouse	lowest published toxic dose: 500.1 mg/kg (2-4 day pregnant)	Reproductive: Effects on newborn: Other neonatal measures or effects Reproductive: Effects on newborn: Physical	REPTED 18,103,2004
subcutaneous mouse	lowest published toxic dose: 500.1 mg/kg (2-4 day pregnant)	Reproductive: Specific developmental abnormalities: Endocrine system Reproductive: Specific developmental abnormalities: Urogenital system Reproductive: Effects on newborn: Viability index (e.g., # alive at day 4 per # born alive)	REPTED 21,154,2006
unreported route mammal (species unspecified)	lowest published toxic dose: 1,000 mg/kg (6-15 day pregnant)	Reproductive: Specific developmental abnormalities: Musculoskeletal system	HBPTO* 1,733,2001
unreported route mouse	lowest published toxic dose: 64 mg/kg (1 day prior to copulation)	Reproductive: Maternal effects: Ovaries, fallopian tubes	TOXID9 78,73,2004
unreported route mouse	lowest published toxic dose: 640 mg/kg (20 day prior to copulation)	Reproductive: Maternal effects: Ovaries, fallopian tubes	TOXID9 78,73,2004
unreported route rat	lowest published toxic dose: 7 gm/kg (70 day male)	Reproductive: Paternal effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count)	AHEMA5 9,89,1980
unreported route rat	lowest published toxic dose: 2,100 mg/kg (21 day prior to copulation)	Reproductive: Maternal effects: Oogenesis	AHEMA5 9,89,1980
unreported route rat	lowest published toxic dose: 9,100 mg/kg (70 day male/21	Reproductive: Effects on fertility: Mating performance (e.g., # sperm	AHEMA5 9,89,1980

	day prior to copulation)	positive females per # females mated; # copulations per # estrus cycles)	
unreported route rat	lowest published toxic dose: 1,600 mg/kg (1-8 day pregnant)	Reproductive: Effects on fertility: Pre- implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea)	HBPTO* 1,733,2001
unreported route rat	lowest published toxic dose: 2,100 mg/kg (7 day pregnant-7 day after birth)	Reproductive: Effects on fertility: Litter size (e.g., # fetuses per litter; measured before birth)	HBPTO* 1,734,2001
unreported route rat	lowest published toxic dose: 50 mg/kg (multigenerations)	Reproductive: Specific developmental abnormalities: Urogenital system Reproductive: Specific developmental abnormalities: Immune and reticuloendothelial system Reproductive: Effects on newborn: Physical	HBPTO* 1,734,2001
unreported route rat	lowest published toxic dose: 5,800 mg/kg (15-22 day pregnant/21 day after birth)	Reproductive: Specific developmental abnormalities: Musculoskeletal system	HBPTO* 1,741,2001
unreported route rat	lowest published toxic dose: 1,450 mg/kg (15-22 day pregnant/21 day after birth)	Reproductive: Specific developmental abnormalities: Urogenital system Reproductive: Effects on newborn: Growth statistics (e.g., reduced weight gain)	HBPTO* 1,741,2001
unreported route rat	lowest published toxic dose: 725 mg/kg (15-22 day pregnant/21 day after birth)	Reproductive: Specific developmental abnormalities: Endocrine system Reproductive: Effects on newborn: Physical	HBPTO* 1,741,2001

TUMORIGENIC DATA AND REFERENCES:

ROUTE/ ORGANISM	DOSE	EFFECT	REFERENCE
oral dog	lowest published toxic dose: 383 gm/kg/3 year- continuous	Tumorigenic: Equivocal tumorigenic agent by RTECS criteria Liver: Tumors	EVHPAZ 36,205,1980

oral mouse	lowest published toxic dose: 56,700 mg/kg/90 week-continuous	Tumorigenic: Carcinogenic by RTECS criteria Lung, Thorax, or Respiration: Tumors Reproductive: Tumorigenic effects: Testicular tumors	JCROD7 93,173,1979
oral mouse	toxic dose : 62,622 mg/kg/2 year-continuous	Tumorigenic: Equivocal tumorigenic agent by RTECS criteria Liver: Tumors	EVHPAZ 36,205,1980
oral mouse	lowest published toxic dose: 65.7 gm/kg/2 year- continuous	Tumorigenic: Carcinogenic by RTECS criteria Reproductive: Tumorigenic effects: Testicular tumors	HBPTO* 2,1339,2001
oral rat	lowest published toxic dose: 18,200 mg/kg/2 year- continuous	Tumorigenic: Carcinogenic by RTECS criteria Reproductive: Tumorigenic effects: Prostate tumors	EVHPAZ 36,205,1980
oral rat	toxic dose : 41 gm/kg/2 year-continuous	Tumorigenic: Equivocal tumorigenic agent by RTECS criteria Liver: Multiple effects Lung, Thorax, or Respiration: Other changes	TXAPA9 11,88,1967
oral rat	toxic dose : 80 gm/kg/2 year-continuous	Tumorigenic: Carcinogenic by RTECS criteria Liver: Tumors Reproductive: Tumorigenic effects: Ovarian tumors	LIFSAK 24,1367,1979
oral rat	toxic dose : 72,800 mg/kg/2 year-continuous	Tumorigenic: Carcinogenic by RTECS criteria Liver: Tumors	EVHPAZ 36,205,1980
oral rat	toxic dose : 87,360 mg/kg/2 year-continuous	Tumorigenic: Carcinogenic by RTECS criteria Liver: Tumors	EVHPAZ 36,205,1980

oral rat	toxic dose : 10,920 mg/kg/1 year-continuous	Tumorigenic: Equivocal tumorigenic agent by RTECS criteria Blood: Lymphoma including Hodgkin's disease	AIPTAK 83,491,1950
oral rat	toxic dose : 45,500 mg/kg/1 year-continuous	Tumorigenic: Equivocal tumorigenic agent by RTECS criteria Blood: Lymphoma including Hodgkin's disease	AIPTAK 83,491,1950
oral rat	lowest published toxic dose: 73 gm/kg/2 year- continuous	Tumorigenic: Carcinogenic by RTECS criteria	HBPTO* 2,1339,2001

ACUTE TOXICITY DATA AND REFERENCES:

ROUTE/ ORGANISM	DOSE	EFFECT	REFERENCE
intraperitoneal hamster	lethal dose (50 percent kill): 500 mg/kg	N/R	ARTODN 58,152,1986
intraperitoneal rat	lowest published toxic dose: 50 mg/kg	Endocrine: Estrogenic Related to Chronic Data: Changes in uterine weight	TXAPA9 14,358,1969
oral duck	lethal dose (50 percent kill): >2 gm/kg	N/R	PEMNDP 9,574,1991
oral hamster	lethal dose (50 percent kill): 2,000 mg/kg	N/R	HBPTO* 2,1337,2001
oral human	lowest published lethal dose: 6,430 mg/kg	N/R	PCOC** -,705,1966
oral mouse	lethal dose (50 percent kill): 510 mg/kg	Behavioral: Convulsions or effect on seizure threshold Behavioral: Excitement Behavioral: Ataxia	GISAAA 58(1),44,1993

oral mouse	lethal dose (50 percent kill): 1,850 mg/kg	N/R	HBPTO* 2,1337,2001
oral mouse	lethal dose (50 percent kill): 5,000 mg/kg	Behavioral: Somnolence (general depressed activity) Behavioral: Food intake (animal) Kidney, Ureter, and Bladder: Urine volume increased	VCVGK* -,297,1994
oral rat	lethal dose (50 percent kill): 1,855 mg/kg	Behavioral: Convulsions or effect on seizure threshold Behavioral: Excitement Behavioral: Ataxia	GISAAA 58(1),44,1993
oral rat	lowest published toxic dose: 4,000 mg/kg	Reproductive: Paternal effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count) Nutritional and Gross Metabolic: Weight loss or decreased weight gain	REPTED 6,491,1992
oral rat	lethal dose (50 percent kill): 5,000 mg/kg	N/R	HBPTO* 2,1337,2001
oral rat	lethal dose (50 percent kill): 5,000 mg/kg	Behavioral: Somnolence (general depressed activity) Behavioral: Food intake (animal) Kidney, Ureter, and Bladder: Urine volume increased	VCVGK* -,297,1994
oral rabbit	lethal dose (50 percent kill): >6 gm/kg	N/R	SPEADM 78-1,16,1978
subcutaneous rat	lowest published toxic dose: 95 mg/kg	Endocrine: Estrogenic	JAFCAU 18,1108,1970
skin human	lowest published toxic dose: 2,414 mg/kg	Behavioral: Somnolence (general depressed activity)	PCOC** -,705,1966
skin rat	lethal dose (50 percent kill): >6 gm/kg	N/R	CMEP** -,1,1956

skin rabbit	lethal dose (50 percent kill): >6 gm/kg	N/R	WRPCA2 3,28,1964
unreported route mammal (species unspecified)	lowest published toxic dose: 4,000 mg/kg	Reproductive: Paternal effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count) Reproductive: Paternal effects: Testes, epididymis, sperm duct	HBPTO* 1,733,2001

OTHER MULTIPLE DOSE DATA AND REFERENCES:

ROUTE/ ORGANISM	DOSE	EFFECT	REFERENCE
intraperitoneal mouse	lowest published toxic dose: 353 mg/kg/10 day-intermittent	Related to Chronic Data: Changes in ovarian weight	BIREBV 42,573,1990
intraperitoneal mouse	lowest published toxic dose: 1,777 mg/kg/10 day-intermittent	Endocrine: Other changes	BIREBV 42,573,1990
intraperitoneal mouse	lowest published toxic dose: 178 mg/kg/10 day-intermittent	Reproductive: Maternal effects: Ovaries, fallopian tubes Reproductive: Maternal effects: Uterus, cervix, vagina	BIREBV 42,573,1990
intraperitoneal mouse	lowest published toxic dose: 378 mg/kg/14 day-intermittent	Endocrine: Effect on menstrual cycle Reproductive: Maternal effects: Ovaries, fallopian tubes Related to Chronic Data: Changes in ovarian weight	REPTED 9,379,1995
intraperitoneal mouse	lowest published toxic dose: 640 mg/kg/20 day-intermittent	Reproductive: Maternal effects: Oogenesis Reproductive: Maternal effects: Ovaries, fallopian tubes	TOSCF2 68,473,2002
intraperitoneal mouse	lowest published toxic dose: 80 mg/kg/2 week-intermittent	Reproductive: Maternal effects: Ovaries, fallopian tubes	TOXID9 60,383,2001

intraperitoneal mouse	lowest published toxic dose: 320 mg/kg/20 day-intermittent	Reproductive: Maternal effects: Ovaries, fallopian tubes Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Other oxidoreductases Biochemical: Metabolism (intermediary): Effect on mitochondrial function	TXAPA9 216,436,2006
intraperitoneal rat	lowest published toxic dose: 600 mg/kg/3 day-intermittent	Liver: Changes in liver weight Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Cytochrome oxidases (indlucing oxidative phosphrylation)	TOLED5 144,93,2003
intraperitoneal rat	lowest published toxic dose: 1,500 mg/kg/3 day-intermittent	Liver: Changes in liver weight	TOLED5 144,93,2003
intraperitoneal rat	lowest published toxic dose: 600 mg/kg/3 day-intermittent	Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Cytochrome oxidases (indlucing oxidative phosphrylation)	TOLED5 144,93,2003
oral dog	lowest published toxic dose: 168 gm/kg/24 week-continuous	Nutritional and Gross Metabolic: Weight loss or decreased weight gain	HBPTO* 2,1338,2001
oral dog	lowest published toxic dose: 84 gm/kg/6 week-continuous	Behavioral: Convulsions or effect on seizure threshold	HBPTO* 2,1338,2001
oral dog	lowest published toxic dose: 126 gm/kg/9 week-continuous	Related to Chronic Data: Death in the "MULTIPLE DOSE" data type field	HBPTO* 2,1338,2001
oral dog	lowest published toxic dose: 365,000 mg/kg/26 week-continuous	Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Phosphatases Blood: Changes in serum composition (e.g. TP, bilirubin, cholesterol) Nutritional and Gross Metabolic: Weight loss or decreased weight gain	VCVGK* -,298,1994

oral dog	lowest published toxic dose: 112,000 mg/kg/8 week-continuous	Eye: Other eye effects Behavioral: Tetany Kidney, Ureter, and Bladder: Other changes	VCVGK* -,298,1994
oral mammal (species unspecified)	lowest published toxic dose: 7,000 mg/kg/70 day-intermittent	Reproductive: Paternal effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count) Reproductive: Paternal effects: Testes, epididymis, sperm duct	HBPTO* 1,733,2001
oral monkey	lowest published toxic dose: 18,250 mg/kg/1 year-intermittent	Behavioral: Alteration of operant conditioning Behavioral: Change in psychophysiological tests	NETEEC 24,87,2002
oral monkey	lowest published toxic dose: 18,250 mg/kg/1 year-intermittent	Eye: Other eye effects Behavioral: Change in psychophysiological tests	NETEEC 24,87,2002
oral monkey	lowest published toxic dose: 4,550 mg/kg/26 week-intermittent	Brain and Coverings: Other degenerative changes Behavioral: Alteration of operant conditioning	NETEEC 26,799,2004
oral monkey	lowest published toxic dose: 6,100 mg/kg/122 day-continuous	Nutritional and Gross Metabolic: Weight loss or decreased weight gain	TOXID9 60,300,2001
oral mouse	lowest published toxic dose: 2,000 mg/kg/10 day-intermittent	Reproductive: Maternal effects: Parturition	HBPTO* 1,733,2001
oral mouse	lowest published toxic dose: 4,000 mg/kg/4 week-intermittent	Reproductive: Maternal effects: Ovaries, fallopian tubes	REPTED 6,93,1992
oral mouse	lowest published toxic dose: 80 mg/kg/10 day-intermittent	Reproductive: Maternal effects: Ovaries, fallopian tubes	TOXID9 72,26,2003
oral mouse	lowest published toxic dose: 975 mg/kg/39 day-intermittent	Reproductive: Paternal effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count)	TOLED5 142,61,2003

oral mouse	lowest published toxic dose: 640 mg/kg/20 day-intermittent	Reproductive: Maternal effects: Ovaries, fallopian tubes Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Catalases Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Other oxidoreductases	TOXID9 44,441,2005
oral rat	lowest published toxic dose: 266 mg/kg/19 week-intermittent	Liver: Other changes Blood: Other changes Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Dehydrogenases	GISAAA 53(10),82,1988
oral rat	lowest published toxic dose: 602 mg/kg/43 week-intermittent	Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Dehydrogenases Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Other oxidoreductases Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Transaminases	GISAAA 58(1),44,1993
oral rat	lowest published toxic dose: 20,000 mg/kg/5 day-intermittent	Reproductive: Paternal effects: Testes, epididymis, sperm duct	REPTED 6,491,1992
oral rat	lowest published toxic dose: 20,000 mg/kg/4 day-intermittent	Related to Chronic Data: Changes in prostate weight	REPTED 6,491,1992
oral rat	lowest published toxic dose: 700 mg/kg/14 day-intermittent	Reproductive: Maternal effects: Uterus, cervix, vagina	TOSCF2 54,154,2000
oral rat	lowest published toxic dose: 1,250 mg/kg/25 day-intermittent	Reproductive: Maternal effects: Menstrual cycle changes or disorders	TOSCF2 54,154,2000
oral rat	lowest published toxic dose: 800 mg/kg/8 day-	Endocrine: Other changes	TXAPA9 97,454,1989

	intermittent		
oral rat	lowest published toxic dose: 1,600 mg/kg/8 day-intermittent	Related to Chronic Data: Changes in uterine weight	TXAPA9 97,454,1989
oral rat	lowest published toxic dose: 1,500 mg/kg/3 day-intermittent	Nutritional and Gross Metabolic: Weight loss or decreased weight gain	TXAPA9 97,454,1989
oral rat	lowest published toxic dose: 1,000 mg/kg/5 day-intermittent	Endocrine: Other changes	TXAPA9 97,454,1989
oral rat	lowest published toxic dose: 2,500 mg/kg/5 day-intermittent	Nutritional and Gross Metabolic: Weight loss or decreased weight gain Related to Chronic Data: Changes in uterine weight	TXAPA9 97,454,1989
oral rat	lowest published toxic dose: 600 gm/kg/10 day-continuous	Related to Chronic Data: Death in the "MULTIPLE DOSE" data type field	JPETAB 99,140,1950
oral rat	lowest published toxic dose: 30 gm/kg/10 day-continuous	Nutritional and Gross Metabolic: Weight loss or decreased weight gain Behavioral: Food intake (animal)	JPETAB 99,140,1950
oral rat	lowest published toxic dose: 13,500 mg/kg/45 day-continuous	Nutritional and Gross Metabolic: Weight loss or decreased weight gain	JPETAB 99,140,1950
oral rat	lowest published toxic dose: 405 gm/kg/45 day-continuous	Related to Chronic Data: Death in the "MULTIPLE DOSE" data type field Liver: Changes in liver weight	JPETAB 99,140,1950
oral rat	lowest published toxic dose: 405 gm/kg/45 day-continuous	Related to Chronic Data: Changes in testicular weight	JPETAB 99,140,1950
oral rat	lowest published toxic dose: 90 gm/kg/30 day-continuous	Related to Chronic Data: Changes in testicular weight Behavioral: Food intake (animal) Reproductive: Paternal effects: Testes, epididymis, sperm duct	JPETAB 99,140,1950

oral rat	lowest published toxic dose: 5,400 mg/kg/18 day-continuous	Related to Chronic Data: Death in the "MULTIPLE DOSE" data type field Behavioral: Tremor	JPETAB 99,140,1950
oral rat	lowest published toxic dose: 101.25 gm/kg/45 day-continuous	Related to Chronic Data: Death in the "MULTIPLE DOSE" data type field	HBPTO* 2,1337,2001
oral rat	lowest published toxic dose: 87.6 gm/kg/2 year-continuous	Nutritional and Gross Metabolic: Weight loss or decreased weight gain	HBPTO* 2,1338,2001
oral rat	lowest published toxic dose: 76 gm/kg/760 day-continuous	Reproductive: Paternal effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count) Reproductive: Paternal effects: Testes, epididymis, sperm duct Reproductive: Other effects on male	HBPTO* 2,1340,2001
oral rat	lowest published toxic dose: 1,400 mg/kg/14 day-continuous	Reproductive: Maternal effects: Oogenesis Reproductive: Maternal effects: Ovaries, fallopian tubes Reproductive: Other effects on female	HBPTO* 2,1340,2001
oral rat	lowest published toxic dose: 500 mg/kg/10 day-intermittent	Reproductive: Other effects on female Nutritional and Gross Metabolic: Weight loss or decreased weight gain	HBPTO* 2,1340,2001
oral rat	lowest published toxic dose: 1,400 mg/kg/14 day-intermittent	Liver: Changes in liver weight Nutritional and Gross Metabolic: Weight loss or decreased weight gain Biochemical: Metabolism (intermediary): Other proteins	JPETAB 294,308,2000
oral rat	lowest published toxic dose: 14 gm/kg/28 day-intermittent	Reproductive: Maternal effects: Ovaries, fallopian tubes Reproductive: Maternal effects: Menstrual cycle changes or disorders Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Phosphatases	ARTODN 75,513,2001

oral rat	lowest published toxic dose: 2.8 gm/kg/28 day-intermittent	Reproductive: Maternal effects: Uterus, cervix, vagina Blood: Changes in serum composition (e.g. TP, bilirubin, cholesterol) Nutritional and Gross Metabolic: Weight loss or decreased weight gain	ARTODN 75,513,2001
oral rat	lowest published toxic dose: 560 mg/kg/28 day-intermittent	Biochemical: Metabolism (intermediary): Plasma proteins not involving coagulation	ARTODN 75,513,2001
oral rat	lowest published toxic dose: 14 gm/kg/28 day-intermittent	Kidney, Ureter, and Bladder: Changes in tubules (including acute renal failure, acute tubular necrosis) Reproductive: Paternal effects: Testes, epididymis, sperm duct Biochemical: Metabolism (intermediary): Lipids including transport	ARTODN 75,513,2001
oral rat	lowest published toxic dose: 2.8 gm/kg/28 day-intermittent	Reproductive: Paternal effects: Prostate, seminal vesicle, Cowper's gland, accessory glands Nutritional and Gross Metabolic: Weight loss or decreased weight gain Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Phosphatases	ARTODN 75,513,2001
oral rat	lowest published toxic dose: 560 mg/kg/28 day-intermittent	Blood: Changes in serum composition (e.g. TP, bilirubin, cholesterol)	ARTODN 75,513,2001
oral rat	lowest published toxic dose: 2.8 gm/kg/28 day-intermittent	Liver: Other changes Endocrine: Adrenal cortex hyperplasia	ARTODN 75,513,2001
oral rat	lowest published toxic dose: 14 gm/kg/28 day-intermittent	Liver: Changes in liver weight Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Phosphatases Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels:	ARTODN 75,513,2001

		Transaminases	
oral rat	lowest published toxic dose: 2,100 mg/kg/6 week-continuous	Related to Chronic Data: Changes in uterine weight Liver: Changes in liver weight Liver: Other changes	JAFCAU 22,969,1974
oral rat	lowest published toxic dose: 5,250 mg/kg/6 week-continuous	Related to Chronic Data: Changes in ovarian weight	JAFCAU 22,969,1974
oral rat	lowest published toxic dose: 8,750 mg/kg/5 week-continuous	Endocrine: Effect on menstrual cycle	JAFCAU 22,969,1974
oral rat	lowest published toxic dose: 4,200 mg/kg/12 week-continuous	Related to Chronic Data: Changes in ovarian weight Liver: Other changes	JAFCAU 22,969,1974
oral rat	lowest published toxic dose: 1,600 mg/kg/8 day-intermittent	Reproductive: Maternal effects: Uterus, cervix, vagina	TXAPA9 90,330,1987
oral rat	lowest published toxic dose: 1,400 mg/kg/56 day-intermittent	Endocrine: Change in gonadotropins	TXAPA9 86,474,1986
oral rat	lowest published toxic dose: 2,800 mg/kg/56 day-intermittent	Endocrine: Other changes	TXAPA9 86,474,1986
oral rat	lowest published toxic dose: 1,225 mg/kg/7 week-intermittent	Nutritional and Gross Metabolic: Weight loss or decreased weight gain	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 2,100 mg/kg/6 week-intermittent	Nutritional and Gross Metabolic: Weight loss or decreased weight gain	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 3,500 mg/kg/5 week-intermittent	Nutritional and Gross Metabolic: Weight loss or decreased weight gain	FAATDF 12,92,1989

oral rat	lowest published toxic dose: 700 mg/kg/1 week-intermittent	Nutritional and Gross Metabolic: Weight loss or decreased weight gain	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 125 mg/kg/5 day-intermittent	Endocrine: Effect on menstrual cycle Reproductive: Maternal effects: Uterus, cervix, vagina	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 200 mg/kg/4 day-intermittent	Endocrine: Effect on menstrual cycle Reproductive: Maternal effects: Uterus, cervix, vagina	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 600 mg/kg/3 day-intermittent	Endocrine: Effect on menstrual cycle Reproductive: Maternal effects: Uterus, cervix, vagina	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 6,900 mg/kg/69 day-intermittent	Reproductive: Maternal effects: Ovaries, fallopian tubes	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 11,900 mg/kg/119 day-intermittent	Endocrine: Changes in pituitary weight Endocrine: Changes in adrenal weight Related to Chronic Data: Changes in ovarian weight	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 23,800 mg/kg/119 day-intermittent	Liver: Changes in liver weight Kidney, Ureter, and Bladder: Changes in kidney weight	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 2,300 mg/kg/23 day-intermittent	Reproductive: Other effects on male	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 3,100 mg/kg/62 day-intermittent	Reproductive: Paternal effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count) Reproductive: Paternal effects: Testes, epididymis, sperm duct Reproductive: Paternal effects: Prostate, seminal vesicle, Cowper's gland, accessory glands	FAATDF 12,92,1989

oral rat	lowest published toxic dose: 1,550 mg/kg/62 day-intermittent	Endocrine: Change in gonadotropins Endocrine: Other changes	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 5,600 mg/kg/56 day-intermittent	Liver: Changes in liver weight Kidney, Ureter, and Bladder: Changes in kidney weight Reproductive: Paternal effects: Testes, epididymis, sperm duct	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 11,200 mg/kg/56 day-intermittent	Endocrine: Changes in pituitary weight Related to Chronic Data: Changes in testicular weight	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 7,500 mg/kg/75 day-intermittent	Endocrine: Androgenic Endocrine: Changes in pituitary weight Related to Chronic Data: Changes in testicular weight	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 15,000 mg/kg/75 day-intermittent	Blood: Other changes	FAATDF 12,92,1989
oral rat	lowest published toxic dose: 1,720 mg/kg/42 day-intermittent	Behavioral: Food intake (animal)	TXCYAC 172,205,2002
oral rat	lowest published toxic dose: 21 gm/kg/7 day-continuous	Reproductive: Paternal effects: Testes, epididymis, sperm duct	TICEL* 13,369,1981
oral rat	lowest published toxic dose: 27,960 mg/kg/60 day-intermittent	Reproductive: Paternal effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count) Nutritional and Gross Metabolic: Weight loss or decreased weight gain Related to Chronic Data: Changes in testicular weight	VCVGK* -,298,1994
oral rat	lowest published toxic dose: 2,000 mg/kg/10 day-intermittent	Liver: Changes in liver weight Nutritional and Gross Metabolic: Weight loss or decreased weight gain	TOXID9 72,132,2003

oral rat	lowest published toxic dose: 750 mg/kg/3 day-intermittent	Liver: Other changes Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Hepatic microsomal mixed oxidase (dealkylation, hydroxylation, etc.)	TXAPA9 193,66,2003
oral rat	lowest published toxic dose: 1,075.2 mg/kg/7 day-continuous	Nutritional and Gross Metabolic: Weight loss or decreased weight gain	TOLED5 135,199,2002
oral rat	lowest published toxic dose: 1,400 mg/kg/7 day-intermittent	Endocrine: Estrogenic Reproductive: Paternal effects: Prostate, seminal vesicle, Cowper's gland, accessory glands Related to Chronic Data: Changes in testicular weight	TOXID9 44,112,2005
oral rat	lowest published toxic dose: 280 mg/kg/7 day-intermittent	Endocrine: Other changes Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Cytochrome oxidases (indlucing oxidative phosphrylation)	TOXID9 78,188,2004
oral rat	lowest published toxic dose: 1,400 mg/kg/7 day-intermittent	Endocrine: Other changes Blood: Changes in serum composition (e.g. TP, bilirubin, cholesterol) Biochemical: Metabolism (intermediary): Other	TOXID9 78,188,2004
oral rat	lowest published toxic dose: 32.5 mg/kg/65 day-continuous	Blood: Changes in spleen	TOXID9 60,29,2001
oral rat	lowest published toxic dose: 200 mg/kg/4 day-intermittent	Reproductive: Paternal effects: Testes, epididymis, sperm duct Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Multiple enzyme effects Biochemical: Metabolism (intermediary): Lipids including transport	ARTODN 76,692,2002
oral rat	lowest published toxic dose: 350	Reproductive: Paternal effects: Testes, epididymis, sperm duct	ARTODN 76,692,2002

	mg/kg/7 day-intermittent	Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Multiple enzyme effects Related to Chronic Data: Changes in prostate weight	
oral rat	lowest published toxic dose: 280 mg/kg/7 day-intermittent	Reproductive: Paternal effects: Testes, epididymis, sperm duct	REPTED 21,148,2006
oral rat	lowest published toxic dose: 1,400 mg/kg/7 day-intermittent	Endocrine: Other changes Reproductive: Paternal effects: Prostate, seminal vesicle, Cowper's gland, accessory glands	REPTED 21,148,2006
oral rat	lowest published toxic dose: 250 mg/kg/20 day-intermittent	Reproductive: Maternal effects: Uterus, cervix, vagina Reproductive: Maternal effects: Menstrual cycle changes or disorders	NTPTR* RACB-20103
oral rat	lowest published toxic dose: 1,000 mg/kg/20 day-intermittent	Liver: Changes in liver weight Endocrine: Changes in pituitary weight Related to Chronic Data: Changes in ovarian weight	NTPTR* RACB-20103
oral rat	lowest published toxic dose: 3,600 mg/kg/72 day-intermittent	Immunological Including Allergic: Increase in cellular immune response Immunological Including Allergic: Decrease in cellular immune response	NTPTR* MG96004
oral rat	lowest published toxic dose: 69 mg/kg/3 day-intermittent	Related to Chronic Data: Changes in uterine weight	TXAPA9 218,280,2007
oral rabbit	lowest published toxic dose: 0.8 gm/kg/4 day-intermittent	Related to Chronic Data: Death in the "MULTIPLE DOSE" data type field Liver: Fatty liver degeneration Kidney, Ureter, and Bladder: Interstitial nephritis	JPETAB 99,140,1950
subcutaneous mouse	lowest published toxic dose: 150 mg/kg/3 day-	Related to Chronic Data: Changes in uterine weight	EVHPAZ 104,1296,1996

	intermittent	Endocrine: Estrogenic	
subcutaneous mouse	lowest published toxic dose: 500.1 mg/kg/3 day-intermittent	Reproductive: Effects on fertility: Other measures of fertility	REPTED 18,103,2004
subcutaneous rat	lowest published toxic dose: 750 mg/kg/30 day-intermittent	Brain and Coverings: Recordings from specific areas of CNS	TXAPA9 197,319,2004
unreported route mammal (species unspecified)	lowest published toxic dose: 8,000 mg/kg/4 day-continuous	Reproductive: Paternal effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count) Reproductive: Paternal effects: Testes, epididymis, sperm duct	HBPTO* 1,733,2001
unreported route mouse	lowest published toxic dose: 640 mg/kg/20 day-intermittent	Endocrine: Other changes Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Cytochrome oxidases (indlucing oxidative phosphrylation)	TOXID9 78,73,2004
unreported route mouse	lowest published toxic dose: 80 mg/kg/10 day-intermittent	Reproductive: Maternal effects: Oogenesis Reproductive: Maternal effects: Uterus, cervix, vagina	TOXID9 66,377,2002
unreported route mouse	lowest published toxic dose: 320 mg/kg/10 day-intermittent	Blood: Changes in serum composition (e.g. TP, bilirubin, cholesterol)	TOXID9 66,377,2002
unreported route mouse	lowest published toxic dose: 1,280 mg/kg/20 day-intermittent	Reproductive: Maternal effects: Ovaries, fallopian tubes	TOXID9 90,80,2006
unreported route rat	lowest published toxic dose: 1,600 mg/kg/8 day-continuous	Reproductive: Maternal effects: Uterus, cervix, vagina Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Multiple enzyme effects	HBPTO* 1,733,2001
unreported route rat	lowest published toxic dose: 60,000 mg/kg/300 day-continuous	Reproductive: Paternal effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count) Reproductive: Paternal effects: Testes, epididymis, sperm duct	HBPTO* 1,733,2001

REVIEWS:

ORGANIZATION	STANDARD	REFERENCE
American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value	time-weighted average 10 mg/m^3	DTLVS* TLV/BEI,2007
American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value	Not classifiable as human carcinogen	DTLVS* TLV/BEI,2007
International Agency for Research on Cancer (IARC) Cancer Review	Animal Inadequate Evidence	IMEMDT 20,259,1979
International Agency for Research on Cancer (IARC) Cancer Review	Human No Adequate Data	IMEMDT 20,259,1979
International Agency for Research on Cancer (IARC) Cancer Review	Group 3	IMSUDL 7,56,1987
TOXICOLOGY REVIEW		TOLED5 127,101,2002
TOXICOLOGY REVIEW		RREVAH 56,107,1975
TOXICOLOGY REVIEW		CTOXAO 13,231,1978
TOXICOLOGY REVIEW		REPTED 22,164,2006
TOXICOLOGY REVIEW		MUREAV 616,7,2007
TOXICOLOGY REVIEW		ENTOX* -,258,2005
TOXICOLOGY REVIEW		ENTOX* -,61,2005
TOXICOLOGY REVIEW		JTEHD6 7,1,2004
TOXICOLOGY REVIEW		REPTED 23,337,2007
TOXICOLOGY REVIEW		REPTED 23,374,2007
TOXICOLOGY REVIEW		REPTED 23,297,2007

STANDARDS AND REGULATIONS:

NIOSH DOCUMENTATION AND SURVEILLANCE:

ORGANIZATION	STANDARD or SURVEY	REFERENCE
National Institute for Occupational Safety and Health (NIOSH) Recommended Exposure Level TO METHOXYCHLOR-air	Carcinogen (0.07 mg/m^3 LOQ)	NIOSH* DHHS #92-100,1992
National Occupational Hazard Survey 1974	National Occupational Hazard Survey 1974: Hazard Code: 46210; Number of Industries 2; Total Number of Facilities 248; Number of Occupations 2; Total Number of Employees Exposed 638	
National Occupational Exposure Survey 1983	National Occupational Exposure Survey 1983: Hazard Code: 46210 EXIT ; Number of Industries 2; Total Number of Facilities 504; Number of Occupations 2; Total Number of Employees Exposed 3,417	

STATUS IN FEDERAL AGENCIES:

ORGANIZATION	REFERENCE
ATSDR TOXICOLOGY PROFILE (NTIS** PB/95/100202/AS)	
EPA GENETOX PROGRAM 1988, Positive/dose response: Cell transform.-BALB/c-3T3	
EPA GENETOX PROGRAM 1988, Negative: Carcinogenicity-mouse/rat; SHE-clonal assay	
EPA GENETOX PROGRAM 1988, Negative: Cell transform.-RLV F344 rat embryo	
EPA GENETOX PROGRAM 1988, Negative: Histidine reversion-Ames test	
EPA GENETOX PROGRAM 1988, Negative: D melanogaster Sex-linked lethal	
EPA GENETOX PROGRAM 1988, Negative: In vitro UDS-human fibroblast; TRP reversion	
EPA GENETOX PROGRAM 1988, Negative: S cerevisiae-homozygosis	
EPA GENETOX PROGRAM 1988, Inconclusive: B subtilis rec assay; E coli polA without S9	
Used as an insecticide	
EPA TSCA Section 8(d) unpublished health/safety studies	
On EPA IRIS database	

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 2001	
NCI Carcinogenesis Bioassay (feed);no evidence:mouse,rat	NCITR* NCI-TR-35,1978

REFERENCES:

CODEN	REFERENCE
AHEMA5	Anatomia, Histologia, Embryologia. (Paul Parey Scientific Pub., 35 W. 38th St., Suite 3W, New York, NY 10018) V.2- 1973-
AIPTAK	Archives Internationales de Pharmacodynamie et de Therapie. (Heymans Institute of Pharmacology, De Pintelaan 185, B-9000 Ghent, Belgium) V.4- 1898-
ARTODN	Archives of Toxicology. (Springer-Verlag, Heidelberger Pl. 3, D-1000 Berlin 33, Fed. Rep. Ger.) V.32- 1974-
BIREBV	Biology of Reproduction. (Soc. for the Study of Reproduction, 309 W. Clark St., Champaign, IL 61820) V.1- 1969-
CFRGBR	Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402)
CGANE7	Congenital Anomalies. (Nippon Senten Ijo Gakkai, 377-2 Ono-higashi, Osakasayama, Osaka-Fu 589 Japan) V.27- 1987-
CMEP**	"Clinical Memoranda on Economic Poisons," U.S. Dept. HEW, Public Health Service, Communicable Disease Center, Atlanta, GA, 1956
CTOXAO	Clinical Toxicology. (New York, NY) V.1-18, 1968-81. For publisher information, see JTCTDW.
DTLVS*	The Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) booklet issues by American Conference of Governmental Industrial Hygienists (ACGIH), Cincinnati, OH, 1996
EMMUEG	Environmental and Molecular Mutagenesis. (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.10- 1987-
ENTOX*	Encyclopedia of Toxicology: Reference Book, Elsevier, 2005
ENVRAL	Environmental Research. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1967-
ETOPFR	Environmental Toxicology and Pharmacology (Elsevier Science, P.O.Box 7247-7682,Philadelphia,PA 19170 -7682,USA OR Elsevier Science B.V.,P.O.Box 1270,1000 BG Amsterdam,The Netherlands) V.1- Feb.1996-
EVHPAZ	EHP, Environmental Health Perspectives. (U.S. Government Printing Office, Supt of Documents, Washington, DC 20402) No.1- 1972-
FAATDF	Fundamental and Applied Toxicology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1-40, 1981-97. For publisher information, see TOSCF2

FEREAC	Federal Register. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402) V.1- 1936-
FOMOAJ	Folia Morphologica (Warsaw). (Panstwowy Zaklad Wydawnictw Lekarskich, ul. Dluga 38-40, 00 238 Warsaw, Poland) V.1- 1929-
GISAAA	Gigiena i Sanitariya. For English translation, see HYSAAV. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1- 1936-
HBPTO*	Handbook of pesticide toxicology. Robert Krieger ed, Academic press, 2001
IMEMDT	IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210) V.1- 1972-
IMSUDL	IARC Monographs, Supplement. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210) No.1- 1979-
JAFCAU	Journal of Agricultural and Food Chemistry. (American Chemical Soc., Distribution Office Dept. 223, POB 57136, West End Stn., Washington, DC 20037) V.1- 1953-
JCROD7	Journal of Cancer Research and Clinical Oncology. (Springer-Verlag New York, Inc., Service Center, 44 Hartz Way, Secaucus, NJ 07094) V.93- 1979-
JJIND8	JNCI, Journal of the National Cancer Institute. (Washington, DC) V.61-79, 1978-87. For publisher information, see JNCIEQ.
JPETAB	Journal of Pharmacology and Experimental Therapeutics. (Williams & Wilkins Co., 428 E. Preston St., Baltimore, MD 21202) V.1- 1909/10-
JTEHD6	Journal of Toxicology and Environmental Health. (Hemisphere Pub., 1025 Vermont Ave., NW, Washington, DC 20005) V.1- 1975/76-
LIFSAK	Life Sciences. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.1-8, 1962-69; V.14- 1974-
MUREAV	Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964-
NCITR*	National Cancer Institute Carcinogenesis Technical Report Series. (Bethesda, MD) No.0-205. For publisher information, see NTPTR*.
NETEEC	Neurotoxicology and Teratology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.9- 1987-
NIOSH*	National Institute of Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda.
NTPTR*	National Toxicology Program Technical Report Series. (Research Triangle Park, NC 27709) No.206-
PCOC**	Pesticide Chemicals Official Compendium, Association of the American Pesticide Control Officials, Inc., 1966. (Topeka, KS)
PEMNDP	Pesticide Manual. (The British Crop Protection Council, 20 Bridport Rd., Thornton Heath CR4 7QG, UK) V.1- 1968-
PSEBAA	Proceedings of the Society for Experimental Biology and Medicine. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1903/04-

RBREV*	Status of Pesticides in Registration, Reregistration, and Special Review (Rainbow Report), Special Review and Reregistration Division Office of Pesticide Programs U.S. Environmental Protection Agency, 401 M. Street, S.W., Washington, D.C. 20460, Spring 1998
REPTED	Reproductive Toxicology. (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523) V.1- 1987-
RREVAH	Residue Reviews. (Springer-Verlag New York, Inc., Service Center, 44 Hartz Way, Secaucus, NJ 07094) V.1- 1962-
SPEADM	Special Publication of the Entomological Society of America. (4603 Calvert Rd., College Park, MD 20740)
TICEL*	Tissue & cell (Edinburgh, Oliver & Boyd) V.1- 1969-
TOLED5	Toxicology Letters. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1977-
TOSCF2	Toxicological Sciences (Oxford University Press, 6277 Sea Harbor Drive, Orlando, FL 32887) V. 41, Jan. 1998-
TOXID9	Toxicologist. (Soc. of Toxicology, Inc., 475 Wolf Ledge Parkway, Akron, OH 44311) V.1- 1981-
TXAPA9	Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1959-
TXCYAC	Toxicology. (Elsevier Scientific Pub. Ireland, Ltd., POB 85, Limerick, Ireland) V.1- 1973-
VCVGK*	"Vrednie chemichescie veshestva, galogen I kislorod sodergashie organicheskie soedinenia". (Hazardous substances. Galogen and oxygen containing substances), Bandman A.L. et al., Chimia, 1994.
WRPCA2	World Review of Pest Control. (London, UK) V.1-10, 1962-71. Discontinued.

Used as an insecticide

RTECS Compound Description:
Agricultural Chemical
Tumorigen
Mutagen
Reproductive Effector
Human Data

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