

III. Appendices

E. Water Appendix

5. Chemical-Specific Inputs Used in the Drinking Water Exposure Assessment

Table III.E.5-1 PRZM/EXAMS Input Values for Acephate

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	183.16	g/mol	RED
Henry's Law Const.	henry	5.10E-13	atm-m ³ /mol	Calculated
Vapor Pressure	vapr	1.70E-06	torr	MRID 40390601, cited in RED. At 24°C (Technical)
Solubility	sol	8.01E+05	mg/L	MRID 40390601, cited in RED. Technical at 25°C
Kd	Kd	0.09	mg/L	MRID 40504811. Only value available: adsorbed in only one of the five soils (clay loam) used in the batch equilibrium studies.
Koc	Koc	4.7	mg/L	MRID 40504811. Only value available: adsorbed in only one of the five soils (clay loam) used in the batch equilibrium studies.
Photolysis half-life	kdp	0	days	MRID 41081603; stable at pH 7
Aerobic Aquatic Metabolism	kbacw	4.6	days	No data available; used 2x 162-1 (MRID 00014991)
Anaerobic Aquatic Metabolism	kbacs	19.8	days	MRID 43971601; 3x single value of 6.6 days
Aerobic Soil Metabolism	asm	2.3	days	MRID 00014991; 90% CI on mean using three values.
Hydrolysis:	pH 5	0	days	MRID 41081604; stable
Hydrolysis:	pH 7	0	days	MRID 41081604; stable
Hydrolysis:	pH 9	18	days	MRID 41081604
Method:	CAM	2	integer	Foliar broadcast modeled in RED; also includes in-furrow treatments
Incorporation Depth:	DEPI	0	cm	Foliar broadcast or pre-plant @ 2-4 in incorporation
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.2. PRZM/EXAMS Input Values for Azinphos Methyl

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	317.32	g/mol	EFED One-Liner
Henry's Law Const.	henry		atm-m ³ /mol	MRID
Vapor Pressure	vapr	2.20E-07	torr	EFED One-Liner
Solubility	sol	25.1	mg/L	EFED One-Liner
Kd	Kd	7.6	mg/L	MRID 42959702
Koc	Koc		mg/L	
Photolysis half-life	kdp	3.19	days	MRID 40297001
Aerobic Aquatic Metabolism	kbacw	191.6	days	2X aerobic soil input parameter
Anaerobic Aquatic Metabolism	kbacs	396	days	MRID 29900/ 2x anaerobic soil input parameter
Aerobic Soil Metabolism	asm	95.8	days	MRID 29900/ 3x single value
Hydrolysis:	pH 5	38	days	MRID 40297001
Hydrolysis:	pH 7	37	days	MRID 40297001
Hydrolysis:	pH 9	6.9	days	MRID 40297001
Method:	CAM	2	integer	
Incorporation Depth:	DEPI	0	cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT	9.9	days	see EFED RED Chapter
	FEXTRC	0.937	cm ⁻¹	see EFED RED Chapter

Table III.E.5.3. PRZM/EXAMS Input Values for Bensulide

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	397.5	g/mol	RED
Henry's Law Const.	henry	7.80E-08	atm-m ³ /mol	RED; calculated value
Vapor Pressure	vapr	8.20E-07	torr	MRID 41532001
Solubility	sol	5.6	mg/L	MRID 41532001
Kd	Kd	43.1	mg/L	MRID 42826701; average of 4 (11, 30.5, 96.8, 34) values
Koc	Koc	2943	mg/L	MRID 42826701; average of 4 values
Photolysis half-life	kdp	200	days	MRID 40513401: Stable
Aerobic Aquatic Metabolism	kbacw	726	days	No study; value is 2x aerobic soil metabolism input value
Anaerobic Aquatic Metabolism	kbacs	0	days	No study; stable in anaerobic soil metabolism study (MRID 40460302)
Aerobic Soil Metabolism	asm	363	days	MRID 40460301; single value (not x3 because of large value)
Hydrolysis:	pH 5	230	days	MRID 00160074
Hydrolysis:	pH 7	220	days	MRID 00160074
Hydrolysis:	pH 9	220	days	MRID 00160074
Method:	CAM	1	integer	Veg: unincorporated ground
Incorporation Depth:	DEPI	0	cm	Unincorporated or incorporated to 4-cm depth
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.4. PRZM/EXAMS Input Values for Chlorethoxyfos

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	336	g/mol	MRID
Henry's Law Const.	henry	8.00E-03	atm-m ³ /mol	MRID
Vapor Pressure	vapr	1.70E-03	torr	MRID
Solubility	sol	2.1	mg/L	MRID
Kd	Kd	111	mg/L	MRID 41290618; mean of 40, 53, 150, 200
Koc	Koc		mg/L	
Photolysis half-life	kdp	27	days	MRID 41736821
Aerobic Aquatic Metabolism	kbacw	46	days	No study available; 2x aerobic soil metabolism half-life value
Anaerobic Aquatic Metabolism	kbacs	94	days	No study avail; 2x anaer soil met t1/2 of 47 da; MRID 41736825
Aerobic Soil Metabolism	asm	23	days	Range 20-23 da; MRIDs 40883706, 41736824
Hydrolysis:	pH 5	72	days	MRID 40883705
Hydrolysis:	pH 7	59	days	MRID 40883705
Hydrolysis:	pH 9	4.3	days	MRID 40883705
Method:	CAM	7	integer	In-furrow, t-band (11/23/98 DW assessment, Matzner)
Incorporation Depth:	DEPI	2	cm	11/23/98 DW assessment, Matzner
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.5. PRZM/EXAMS Input Values for Chlorpyrifos

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	351	g/mol	RED
Henry's Law Const.	henry	4.20E-06	atm-m ³ /mol	RED
Vapor Pressure	vapr	1.87E-05	torr	RED
Solubility	sol	2	mg/L	RED
Kd	Kd		mg/L	
Koc	Koc	6070	mg/L	MRIDs 00155636, 00155637, 40050401, 41892801, 41892802, 42493901; mean of range 360-31000
Photolysis half-life	kdp	30	days	MRID 41747206
Aerobic Aquatic Metabolism	kbacw	154	days	No study avail; 2x aerobic soil metabolism input
Anaerobic Aquatic Metabolism	kbacs	126.7	days	No study avail; 2x anaerobic soil met (15-58 da), MRID 00025619
Aerobic Soil Metabolism	asm	77	days	90%th pct CI on mean of range 11-180 da; MRIDs 00025619, 42144911, 42144912
Hydrolysis:	pH 5	72	days	MRID 00155577
Hydrolysis:	pH 7	72	days	MRID 00155577
Hydrolysis:	pH 9	16	days	MRID 00155577
Method:	CAM		integer	Includes both aerial/foliar and ground/broadcast/incorporated
Incorporation Depth:	DEPI		cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.6. PRZM/EXAMS Input Values for Diazinon

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	304.34	g/mol	RED
Henry's Law Const.	henry	1.40E-06	atm-m ³ /mol	RED
Vapor Pressure	vapr	1.40E-04	torr	RED
Solubility	sol	40	mg/L	RED
Kd	Kd		mg/L	
Koc	Koc	758	mg/L	MRID 40512601; see Jones, 2000; D271987
Photolysis half-life	kdp	52	days	MRID 00153229; see Jones, 2000; D271987
Aerobic Aquatic Metabolism	kbacw	82	days	RED Chapter for Diazinon; 2x aerobic soil metabolism value
Anaerobic Aquatic Metabolism	kbacs	164	days	2x aerobic aquatic metabolism value
Aerobic Soil Metabolism	asm	41	days	EFED RED Chapter for Diazinon; 90% CI on mean
Hydrolysis:	pH 5	12	days	EFED RED Chapter for Diazinon
Hydrolysis:	pH 7	138	days	EFED RED Chapter for Diazinon
Hydrolysis:	pH 9	77	days	EFED RED Chapter for Diazinon
Method:	CAM	2	integer	
Incorporation Depth:	DEPI	0	cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.7. PRZM/EXAMS Input Values for Dichlorvos (DDVP)

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	221	g/mol	From RED
Henry's Law Const.	henry	5.01E-08	atm-m ³ /mol	Measured (from RED)
Vapor Pressure	vapr	1.21E-02	torr	
Solubility	sol	15000	mg/L	From RED
Kd	Kd		mg/L	
Koc	Koc	37	mg/L	41723103, 40034904
Photolysis half-life	kdp	0	days	43326601--stable with longer irradiated half-lives than dark control
Aerobic Aquatic Metabolism	kbacw	2.5	days	no data; 2x aerobic soil metabolism half-life value
Anaerobic Aquatic Metabolism	kbacs	12.6	days	no data; 2x anaerobic soil metabolism half-life value (43835701)
Aerobic Soil Metabolism	asm	1.25	days	41723102; 3x single half-life value
Hydrolysis:	pH 5	12	days	41723101
Hydrolysis:	pH 7	5	days	41723101
Hydrolysis:	pH 9	0.875	days	41723101
Method:	CAM		integer	
Incorporation Depth:	DEPI		cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.8. PRZM/EXAMS Input Values for Dicrotophos

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	237.19	g/mol	MRID 43772301
Henry's Law Const.	henry	3.13E-11	atm-m ³ /mol	RED; calculated
Vapor Pressure	vapr	7.00E-05	torr	MRID 43500401
Solubility	sol	11990	mg/L	MRID 43603202, 43603201
Kd	Kd		mg/L	
Koc	Koc	73	mg/L	MRID 00160828; mean of 11, 40, 53, 187
Photolysis half-life	kdp	0	days	stable; 160824
Aerobic Aquatic Metabolism	kbacw	18	days	No data; aer soil met input value x 2
Anaerobic Aquatic Metabolism	kbacs	0	days	no data
Aerobic Soil Metabolism	asm	9	days	160826, single value (3 days) x 3
Hydrolysis:	pH 5	117	days	160823
Hydrolysis:	pH 7	72	days	160823
Hydrolysis:	pH 9	28	days	160823
Method:	CAM		integer	
Incorporation Depth:	DEPI		cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.9. PRZM/EXAMS Input Values for Dimethoate

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	229.2	g/mol	RED
Henry's Law Const.	henry	8.00E-11	atm-m ³ /mol	RED
Vapor Pressure	vapr	1.85E-06	torr	RED
Solubility	sol	4.00E+04	mg/L	RED
Kd	Kd	0.42	mg/L	MRID 00164959; average of 4 (0.06, 0.30, 0.57, 0.74) values
Koc	Koc		mg/L	
Photolysis half-life	kdp	0	days	MRID 00159762: Stable
Aerobic Aquatic Metabolism	kbacw	14.4	days	No study; value is 2x aerobic soil metabolism input value
Anaerobic Aquatic Metabolism	kbacs	44	days	No study; value is 2x anaerobic soil metabolism input value (MRID 42843201)
Aerobic Soil Metabolism	asm	7.2	days	MRID 42843201; 3x single half-life value
Hydrolysis:	pH 5	156	days	MRID 00159761
Hydrolysis:	pH 7	68	days	MRID 00159761
Hydrolysis:	pH 9	4.4	days	MRID 00159761
Method:	CAM	2	integer	Typically foliar application
Incorporation Depth:	DEPI	0	cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.10. PRZM/EXAMS Input Values for Disulfoton Total Toxic Residues

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	274.39	g/mol	Parent; MRID 150088
Henry's Law Const.	henry	2.60E-06	atm-m ³ /mol	Parent; RED
Vapor Pressure	vapr	1.8X10 ⁻⁴	torr	Parent; RED
Solubility	sol	15	mg/L	Parent; MRID 150088
Kd	Kd		mg/L	
Koc	Koc	552	mg/L	Parent; MRID 44373103; no data fro sulfoxide & sulfone, which are expected to be more mobile than parent
Photolysis half-life	kdp	4	days	Parent; MRID 40471102; 93 hr half-life
Aerobic Aquatic Metabolism	kbacw	260	days	Set to = aerobic soil
Anaerobic Aquatic Metabolism	kbacs		days	No valid study available
Aerobic Soil Metabolism	asm	260	days	MRIDs 43800101, 40042201, 41585101; Sulfoxide = 17 days; sulfone =150 days; upper CI on mean
Hydrolysis:	pH 5	1174	days	parent; MRID 00143405
Hydrolysis:	pH 7	323	days	parent; MRID 00143405
Hydrolysis:	pH 9	231	days	parent; MRID 00143405
Method:	CAM		integer	
Incorporation Depth:	DEPI		cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			Foliar diss rate 3.3 da; MRID 41201801
	FEXTRC			

Table III.E.5.11. PRZM/EXAMS Input Values for Disulfoton Parent Compound Only

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	274.39	g/mol	MRID 150088
Henry's Law Const.	henry	2.60E-06	atm-m ³ /mol	RED (measured)
Vapor Pressure	vapr	1.8X10 ⁻⁴	torr	RED; 20C
Solubility	sol	15	mg/L	MRID 150088, 20 C
Kd	Kd		mg/L	
Koc	Koc	552	mg/L	MRIDs 44373103, 00145469; mean of 386, 449, 483, 888
Photolysis half-life	kdp	4	days	MRID 40471102; 93 hr half-life
Aerobic Aquatic Metabolism	kbacw	12	days	No study available; 2x aerobic soil metabolism input value
Anaerobic Aquatic Metabolism	kbacs		days	No valid study available
Aerobic Soil Metabolism	asm	6	days	MRIDs 43800101, 40042201, 41585101; 90% CI on mean of 2 values
Hydrolysis:	pH 5	1174	days	MRID 00143405
Hydrolysis:	pH 7	323	days	MRID 00143405
Hydrolysis:	pH 9	231	days	MRID 00143405
Method:	CAM		integer	
Incorporation Depth:	DEPI		cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			Foliar diss rate 3.3 da; MRID 41201801
	FEXTRC			

Table III.E.5.12. PRZM/EXAMS Input Values for Ethoprop .

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	242.3	g/mol	RED
Henry's Law Const.	henry	1.49E-07	atm-m ³ /mol	RED
Vapor Pressure	vapr	3.50E-04	torr	RED
Solubility	sol	843	mg/L	RED
Kd	Kd	2.1	mg/L	MRID not given in RED; average of 4 (1.08, 1.24, 2.10, 3.78) values
Koc	Koc		mg/L	MRID
Photolysis half-life	kdp	0	days	MRIDs 41270702, 43833502; stable
Aerobic Aquatic Metabolism	kbacw	600	days	No study; value is 2x aerobic soil metabolism input value
Anaerobic Aquatic Metabolism	kbacs	300	days	MRID 00160171; 3x single half-life value
Aerobic Soil Metabolism	asm	300	days	MRID 00160171; 3x single half-life value
Hydrolysis:	pH 5	0	days	MRID 41270703; stable
Hydrolysis:	pH 7	0	days	MRID 41270703; stable
Hydrolysis:	pH 9	0	days	MRID 41270703; stable
Method:	CAM		integer	Incl. band incorporation, soil broadcast, broadcast incorp, in-furrow
Incorporation Depth:	DEPI		cm	Incorporated or watered in
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.13. PRZM/EXAMS Input Values for Fenamiphos Total Toxic Residues

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	303.36	g/mol	EFED RED chapter; parent
Henry's Law Const.	henry		atm-m ³ /mol	
Vapor Pressure	vapr	9.97E-10	torr	EFED RED chapter; parent
Solubility	sol	400	mg/L	EFED RED chapter; parent
Kd	Kd	0.958	mg/L	MRID 407748-08; lowest non-sand Kf for parent; sulfoxide, sulfone more mobile in column leaching
Koc	Koc		mg/L	
Photolysis half-life	kdp	75	days	MRID 40608001; parent, corrected for dark control
Aerobic Aquatic Metabolism	kbacw	336	days	MRID 421493-03; 2x aerobic soil input parameter
Anaerobic Aquatic Metabolism	kbacs	399	days	MRID 412869-01; 6x anaerobic soil metabolism rate
Aerobic Soil Metabolism	asm	168	days	MRID 421493-03; half-life 62 d for sulfoxide, 29 d for sulfone; comb residue 56 days (x3)
Hydrolysis:	pH 5	247	days	MRID 421493-02; see Jones, RD, 2001, Revised Fenamiphos Est. Env. Conc.
Hydrolysis:	pH 7	300	days	MRID 421493-02; see Jones, RD, 2001, Revised Fenamiphos Est. Env. Conc.
Hydrolysis:	pH 9	231	days	MRID 421493-02; see Jones, RD, 2001, Revised Fenamiphos Est. Env. Conc.
Method:	CAM	4	integer	
Incorporation Depth:	DEPI	2	cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.14. PRZM/EXAMS Input Values for Fenamiphos Parent Compound Only

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	303.36	g/mol	EFED RED chapter
Henry's Law Const.	henry		atm-m ³ /mol	
Vapor Pressure	vapr	9.97E-10	torr	EFED RED chapter
Solubility	sol	400	mg/L	EFED RED chapter
Kd	Kd	0.958	mg/L	MRID 407748-08; lowest non-sand Kf
Koc	Koc		mg/L	
Photolysis half-life	kdp	75	days	MRID 40608001; corrected for dark control
Aerobic Aquatic Metabolism	kbacw	12	days	MRID 421493-03; 2x aerobic soil input parameter
Anaerobic Aquatic Metabolism	kbacs	399	days	MRID 412869-01; 6x anaerobic soil metabolism rate
Aerobic Soil Metabolism	asm	13.3	days	MRID 421493-03; 3x single value
Hydrolysis:	pH 5	247	days	MRID 421493-02; see Jones, RD, 2001, Revised Fenamiphos Est. Env. Conc.
Hydrolysis:	pH 7	300	days	MRID 421493-02; see Jones, RD, 2001, Revised Fenamiphos Est. Env. Conc.
Hydrolysis:	pH 9	231	days	MRID 421493-02; see Jones, RD, 2001, Revised Fenamiphos Est. Env. Conc.
Method:	CAM	4	integer	
Incorporation Depth:	DEPI	2	cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.15. PRZM/EXAMS Input Values for Malathion

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	330	g/mol	RED
Henry's Law Const.	henry	1.20E-07	atm-m ³ /mol	EFED One-liner
Vapor Pressure	vapr	4.00E-05	torr	EFED One-liner
Solubility	sol	145	mg/L	RED
Kd	Kd		mg/L	
Koc	Koc	151	mg/L	MRID 41345201
Photolysis half-life	kdp	156	days	MRID 41673001, 43166301 without acetone sensitizer
Aerobic Aquatic Metabolism	kbacw	3.27	days	MRID 42271601, 43163301 3x single value, value uncertain
Anaerobic Aquatic Metabolism	kbacs	7.5	days	MRID 42216301, 43166301 3x single value, value uncertain
Aerobic Soil Metabolism	asm	3	days	MRID 41721701, 43163301, see RED Appendix 3
Hydrolysis:	pH 5	107	days	MRID 40941201, 43166301
Hydrolysis:	pH 7	6.2	days	MRID 40941201, 43166301
Hydrolysis:	pH 9	0.5	days	MRID 40941201, 43166301
Method:	CAM	2	integer	
Incorporation Depth:	DEPI	0	cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			RED used 90% of dissipation values, should not have
	FEXTRC			

Table III.E.5.16. PRZM/EXAMS Input Values for Methamidophos

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	141.14	g/mol	EFGWB One-Liner
Henry's Law Const.	henry	1.60E-11	atm-m ³ /mol	Calculated
Vapor Pressure	vapr	1.73E-05	torr	MRID 43661003. At 24°C (Technical)
Solubility	sol	200000	mg/L	MRID 43661003.
Kd	Kd		mg/L	
Koc	Koc	1.5	mg/L	MRID 40504811. Only one Koc value available, adsorbed in only one of the five soils (clay loam) used in batch equilibrium studies.
Photolysis half-life	kdp	200.5	days	MRID 00150610; pH 5 (dark control-corrected)
Aerobic Aquatic Metabolism	kbacw	3.5	days	No data available; used 2x 162-1 (MRID 00014991)
Anaerobic Aquatic Metabolism	kbacs	0	days	No anaerobic aquatic metabolism data are available. Since significant hydrolysis occurs at pHs >5, assume compound is stable to aquatic metabolism.
Aerobic Soil Metabolism	asm	1.75	days	MRID 41372201; 3 X single value of 14 hours.
Hydrolysis:	pH 5	0	days	MRID 00150609
Hydrolysis:	pH 7	27	days	MRID 00150609
Hydrolysis:	pH 9	3.2	days	MRID 00150609
Method:	CAM	2	integer	
Incorporation Depth:	DEPI	0	cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.17. PRZM/EXAMS Input Values for Methidathion

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	302.3	g/mol	MRID
Henry's Law Const.	henry	3.97E-09	atm-m ³ /mol	MRID
Vapor Pressure	vapr	2.48E-06	torr	MRID
Solubility	sol	250	mg/L	MRID
Kd	Kd		mg/L	MRID
Koc	Koc	325	mg/L	MRID (00158529)
Photolysis half-life	kdp	11	days	MRID (42081709)
Aerobic Aquatic Metabolism	kbacw	39.8	days	(see asm, 2 x of asm value)MRID
Anaerobic Aquatic Metabolism	kbacs	20	days	(2 x soil anaerobic value) MRID (42262501)
Aerobic Soil Metabolism	asm	19.9	days	MRID (44545101, 4226501) 90%ile value
Hydrolysis:	pH 5	37	days	MRID (42037701, NOTE: pH 4 not 5)
Hydrolysis:	pH 7	48	days	MRID (42037701)
Hydrolysis:	pH 9	13	days	MRID (42037701)
Method:	CAM	2	integer	
Incorporation Depth:	DEPI	0	cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.18. PRZM/EXAMS Input Values for Methyl Parathion

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	265	g/mol	MRID
Henry's Law Const.	henry	6.12E-07	atm-m ³ /mol	MRID
Vapor Pressure	vapr	9.70E-06	torr	MRID
Solubility	sol	60	mg/L	MRID
Kd	Kd		mg/L	MRID
Koc	Koc	487	mg/L	MRID 40999001
Photolysis half-life	kdp	2.04	days	MRID 40809701
Aerobic Aquatic Metabolism	kbacw	12.3	days	MRID 41768901 3x single value
Anaerobic Aquatic Metabolism	kbacs	1.5	days	MRID 41768901 3x single value
Aerobic Soil Metabolism	asm	11.25	days	MRID 41735901 3x single value
Hydrolysis:	pH 5	68	days	MRID 0013275,40784501
Hydrolysis:	pH 7	40	days	MRID 0013275,40784501
Hydrolysis:	pH 9	33	days	MRID 0013275,40784501
Method:	CAM	2	integer	
Incorporation Depth:	DEPI	0	cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			simulated washoff 0.5 cm-1
	FEXTRC			

Table III.E.5.19. PRZM/EXAMS Input Values for Naled

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	381	g/mol	Merck
Henry's Law Const.	henry	1.13E-07	atm-m ³ /mol	Calculated
Vapor Pressure	vapr	4.50E-04	torr	
Solubility	sol	2000	mg/L	
Kd	Kd		mg/L	
Koc	Koc	180	mg/L	00161100, 40279200, 40394904, 41354104, 41354105 and 41354106
Photolysis half-life	kdp	69	days	41310702 and 42445103
Aerobic Aquatic Metabolism	kbacw	1.5	days	from RED
Anaerobic Aquatic Metabolism	kbacs	4.5	days	MRIDs 40618201, 41354102, 42445101
Aerobic Soil Metabolism	asm	1.00	days	85408
Hydrolysis:	pH 5	4	days	40034902 and 41354101
Hydrolysis:	pH 7	0.64	days	40034902 and 41354101
Hydrolysis:	pH 9	0.07	days	40034902 and 41354101
Method:	CAM		integer	
Incorporation Depth:	DEPI		cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.20. PRZM/EXAMS Input Values for Oxydemeton Methyl

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	246	g/mol	40620301
Henry's Law Const.	henry	9.26E-09	atm-m ³ /mol	Calculated
Vapor Pressure	vapr	2.86E-05	torr	42951203
Solubility	sol	1000	mg/L	42951203
Kd	Kd	0.45	mg/L	mrid 40884201
Koc	Koc		mg/L	
Photolysis half-life	kdp	466	days	mrid 40781501; corrected for dark control (137 in light, 194 in dark)
Aerobic Aquatic Metabolism	kbacw	19.2	days	no study; 2x aerobic soil metabolism input value
Anaerobic Aquatic Metabolism	kbacs	10.5	days	42901801 half-life *3
Aerobic Soil Metabolism	asm	9.6	days	MRID 42831501, 3.2 days x 3
Hydrolysis:	pH 5	93	days	MRID 001430547, hydhaf was used
Hydrolysis:	pH 7	40	days	MRID 001430547, hydhaf was used
Hydrolysis:	pH 9	2.5	days	MRID 001430547, hydhaf was used
Method:	CAM		integer	T-band?
Incorporation Depth:	DEPI		cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.21. PRZM/EXAMS Input Values for Phorate Total Toxic Residues

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	260	g/mol	MRID 41297901; parent
Henry's Law Const.	henry	2.87E-08	atm-m ³ /mol	Calculated
Vapor Pressure	vapr	7.50E-04	torr	MRID 41049502; parent
Solubility	sol	8926	mg/L	MRID 41049501; sulfoxide
Kd	Kd	0.53	mg/L	MRID 44671204; sulfoxide/more mobile
Koc	Koc	91	mg/L	
Photolysis half-life	kdp	2	days	MRID 41348508
Aerobic Aquatic Metabolism	kbacw	11	days	MRID 44863002, total toxic half-life based on applied parent and degradates
Anaerobic Aquatic Metabolism	kbacs	53	days	41936002; 2x anaerobic soil metabolism value
Aerobic Soil Metabolism	asm	121	days	(Getzwin and Shanks, J. Econ. Entom. 63:52-58) (linear, total toxic half-life)
Hydrolysis:	pH 5	3	days	MRID 41348507
Hydrolysis:	pH 7	3	days	MRID 41348507
Hydrolysis:	pH 9	4	days	MRID 41348507
Method:	CAM	8	integer	Corn_ t-band (cam 7); cotton/peanuts cam 8
Incorporation Depth:	DEPI	2.5	cm	1.27 cm for cotton; 2.5 cm for corn, peanuts
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.22. PRZM/EXAMS Input Values for Phorate Parent Compound Only

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	260	g/mol	41297901
Henry's Law Const.	henry	5.13E-07	atm-m ³ /mol	Calculated
Vapor Pressure	vapr	7.50E-04	torr	41049502
Solubility	sol	500	mg/L	41049501
Kd	Kd	4.04	mg/L	42208201
Koc	Koc		mg/L	
Photolysis half-life	kdp	2	days	41348508
Aerobic Aquatic Metabolism	kbacw	1.5	days	44863002; 3x single value
Anaerobic Aquatic Metabolism	kbacs	53	days	41936002; 2x anaerobic soil metabolism value
Aerobic Soil Metabolism	asm	8.3	days	(Getzwin and Shanks, J. Econ. Entom. 63:52-58) (non-linear, no adjustment of value)
Hydrolysis:	pH 5	3	days	MRID 41348507
Hydrolysis:	pH 7	3	days	MRID 41348507
Hydrolysis:	pH 9	4	days	MRID 41348507
Method:	CAM	7	integer	Corn_ t-band (cam 7); cotton/peanuts cam 8
Incorporation Depth:	DEPI	2.5	cm	1.27 cm for cotton; 2.5 cm for corn, peanuts
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.23. PRZM/EXAMS Input Values for Phosmet

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	317.3	g/mol	RED
Henry's Law Const.	henry	7.50E-09	atm-m ³ /mol	RED (calculated)
Vapor Pressure	vapr	4.50E-07	torr	RED
Solubility	sol	25	mg/L	RED
Kd	Kd	8.2	mg/L	MRID 40599002; average of 4 (1.17, 12.4, 13.6, 15.8) values
Koc	Koc		mg/L	MRID
Photolysis half-life	kdp	0	days	MRID 42607901: Stable (hydrolysis likely mechanism of degradation)
Aerobic Aquatic Metabolism	kbacw	18	days	No study; value is 2x aerobic soil metabolism input value
Anaerobic Aquatic Metabolism	kbacs	30	days	No study; value is 2x anaerobic soil metabolism input value (MRID 41497801)
Aerobic Soil Metabolism	asm	9	days	MRID 00112304; 3x single half-life value [compare w/ field dissipation t1/2s of 5-19 da)
Hydrolysis:	pH 5	7.5	days	MRID 40394301
Hydrolysis:	pH 7	0.4	days	MRID 40394301
Hydrolysis:	pH 9	0.004	days	MRID 40394301
Method:	CAM	2	integer	aerial app (2) for alfalfa; air blast for fruit crops
Incorporation Depth:	DEPI		cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.24. PRZM/EXAMS Input Values for Phostebupirim

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	318.4	g/mol	
Henry's Law Const.	henry		atm-m ³ /mol	
Vapor Pressure	vapr	3.80E-05	torr	
Solubility	sol	5.5	mg/L	
Kd	Kd		mg/L	Kd ranged from 12.4 to 15.6
Koc	Koc	1779	mg/L	MRIDs 420054-69, -70; mean of 2674, 2137, 1024, 1281
Photolysis half-life	kdp	1.3	days	MRID 42005467; no degradation in dark control
Aerobic Aquatic Metabolism	kbacw	666	days	No study; value is 2x aerobic soil metabolism input value
Anaerobic Aquatic Metabolism	kbacs	558	days	No study; 2x anaerobic soil metabolism value (279 da, MRID 42005468)
Aerobic Soil Metabolism	asm	333	days	343 da @ 34x max rate (MRID 42005468); 55, 82, 343 da @ max label rate (MRID 44299803, supplemental) -- 90% CI on mean
Hydrolysis:	pH 5	47	days	MRID 42005465
Hydrolysis:	pH 7	45	days	MRID 42005465
Hydrolysis:	pH 9	41	days	MRID 42005465
Method:	CAM	7	integer	Granular; bands, t-bands, in-furrow
Incorporation Depth:	DEPI	0	cm	No incorporation modeled, 12/8/97 DW assessment
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.25. PRZM/EXAMS Input Values for Profenofos

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	374	g/mol	MRID
Henry's Law Const.	henry	1.83E-08	atm-m ³ /mol	MRID
Vapor Pressure	vapr	6.70E-09	torr	MRID
Solubility	sol	2	mg/L	MRID
Kd	Kd	9.7	mg/L	MRID 416273-11 (average of 4.6, 7.5, 17 -- non-clay soils)
Koc	Koc		mg/L	MRID
Photolysis half-life	kdp	75	days	MRIDs 418799-01, 419390-02
Aerobic Aquatic Metabolism	kbacw	12	days	2x aerobic soil met. value; no aerobic aquatic study available
Anaerobic Aquatic Metabolism	kbacs	9	days	3x single value (3 da); MRID 422181-01
Aerobic Soil Metabolism	asm	6	days	3x single value (2 da); MRID 423343-02
Hydrolysis:	pH 5	108	days	MRIDs 416273-09, 419390-01
Hydrolysis:	pH 7	62	days	MRIDs 416273-09, 419390-01
Hydrolysis:	pH 9	0.3	days	MRIDs 416273-09, 419390-01
Method:	CAM	2	integer	2 for aerial spray; 7 for banded
Incorporation Depth:	DEPI	2.5	cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.26. PRZM/EXAMS Input Values for Terbufos Total Toxic Residues

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	288	g/mol	MRID 41297901; parent
Henry's Law Const.	henry	3.73E-08	atm-m ³ /mol	Calculated
Vapor Pressure	vapr	3.16E-04	torr	MRID 41049502; parent
Solubility	sol	3210	mg/L	MRID 41049501, for sulfoxide since it is the predominant toxic residue
Kd	Kd		mg/L	
Koc	Koc	58	mg/L	MRID 41373604; sulfoxide/sulfone
Photolysis half-life	kdp	1	days	MRID 161567
Aerobic Aquatic Metabolism	kbacw	23	days	44862502, total toxic terbufos half-life from applied compounds
Anaerobic Aquatic Metabolism	kbacs	34	days	41749801, total toxic residues
Aerobic Soil Metabolism	asm	129	days	00156853, linear degradation of total toxic residue
Hydrolysis:	pH 5	0	days	MRID 00087694; Bowman&Sans (1982) indicate metabolites stable @ acidic pH
Hydrolysis:	pH 7	0	days	MRID 00087694; Bowman&Sans (1982) indicate metabolites stable @ acidic pH
Hydrolysis:	pH 9	0	days	MRID 00087694; Bowman&Sans (1982) show rates of 41 da for sulfoxide + 32 da for sulfone; using aquatic metabolism data to capture hydrolysis + metabolism
Method:	CAM	7	integer	Corn, sorghum, beets CAM 7 (t-band)
Incorporation Depth:	DEPI	2.5	cm	Incorporated to 2.5 cm
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.27. PRZM/EXAMS Input Values for Terbufos Parent Compound Only

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	288	g/mol	41297901
Henry's Law Const.	henry	2.39E-05	atm-m ³ /mol	Calculated
Vapor Pressure	vapr	3.16E-04	torr	41049502
Solubility	sol	5	mg/L	41049501
Kd	Kd		mg/L	
Koc	Koc	633	mg/L	41373604
Photolysis half-life	kdp	1	days	161567
Aerobic Aquatic Metabolism	kbacw	1.5	days	44672004; pond water only, upper 90th CI on mean
Anaerobic Aquatic Metabolism	kbacs	11.7	days	41749801
Aerobic Soil Metabolism	asm	5.6	days	00156853 (non-linear, no adjustment of value because of formation and decline)
Hydrolysis:	pH 5	12	days	MRID 00087694
Hydrolysis:	pH 7	13	days	MRID 00087694
Hydrolysis:	pH 9	14	days	MRID 00087694
Method:	CAM	7	integer	Corn, sorghum, beets CAM 7 (t-band)
Incorporation Depth:	DEPI	2.5	cm	incorp to 2.5 cm
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			

Table III.E.5.28. PRZM/EXAMS Input Values for Tribufos

Property/ Parameter	PRZM Variable Name	Value	Units	Comments / References
Molecular weight	mwt	314	g/mol	9/6/00 Updated DW memo from D. Spatz, D. Young
Henry's Law Const.	henry		atm-m ³ /mol	
Vapor Pressure	vapr	1.70E-06	torr	9/6/00 Updated DW memo from D. Spatz, D. Young
Solubility	sol	2.3	mg/L	9/6/00 Updated DW memo from D. Spatz, D. Young
Kd	Kd	76.9	mg/L	MRID 42350004; average of 4 (66.8, 60.6, 74.3, 106) values
Koc	Koc	9300	mg/L	9/6/00 Updated DW memo from D. Spatz, D. Young
Photolysis half-life	kdp	0	days	MRID 41719401: Stable
Aerobic Aquatic Metabolism	kbacw	1490	days	No study; value is 2x aerobic soil metabolism input value
Anaerobic Aquatic Metabolism	kbacs	150	days	MRID 43325504; 5-mo t _{1/2} , 9/6/00 Spatz/Young DW memo
Aerobic Soil Metabolism	asm	745	days	MRID 42007204; single value (not x3 because of high value)
Hydrolysis:	pH 5	0	days	MRID 41618814: Stable
Hydrolysis:	pH 7	0	days	MRID 41618814: Stable
Hydrolysis:	pH 9	124	days	MRID 41618814
Method:	CAM		integer	See PRZM manual
Incorporation Depth:	DEPI		cm	
Record 17:	FILTRA			
	IPSCND			
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC			