

APPENDIX A: TERRESTRIAL TOXICITY DATA FOR PESTICIDES

Table A1: Toxicity data for Aldrin (Van de Plassche et al., 1994)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta										
	pheretima posthuma, adults	artificial	6	10	5	25	14d	LC50	mortality	11	3.3
	Insecta										
	folsomia candida	sand	-	0.7	1.7	13	24h	LC50	mortality	0.75	1.1
	folsomia candida	sand	-	0.7	1.7	24	24h	LC50	mortality	0.42	0.6
	pterostichus melanarius, first instar	sand	-	0.7	1.7	20	24h	LC50	mortality	0.11	0.2
Chronic toxicity to organisms											
	Bacteriophyta										
	actinomyceta	sandy loam	-	1.7	-	30	3w	EC20	inhibition	25	13
	actinomyceta	sandy loam	-	1.7	-	30	4w	EC20	inhibition	50	25
	bacteria spec.	sandy loam	-	1.7	-	30	4w	EC7	inhibition	25	38
	bacteria spec.	sandy loam	-	1.7	-	30	4w	EC13	inhibition	50	38
	Fungi										
	fungi spec.	sandy loam	-	1.7	-	30	3w	EC33	inhibition	25	13
	fungi spec.	sandy loam	-	1.7	-	30	3w	EC65	inhibition	50	7.5
	Nematoda										
	melanotus communis, late instar larvae	org. loam	-	7.4	-	-	21d	LC42	mortality	2.4	0.3
	melanotus communis, late instar larvae	silt loam	-	9	-	-	28d	LC23	mortality	2.4	0.3
	melanotus communis, late instar larvae	silt loam	-	9	-	-	28d	LC63	mortality	3.6	0.1
	melanotus communis, late instar larvae	silt loam	-	9	-	-	28d	LC77	mortality	4.8	0.2
	melanotus communis, late instar larvae	loamy sand	-	3.5	-	-	28d	LC82	mortality	2.4	0.2

Table A2: Toxicity data for Anilazine (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta Eisenia foetida	art. soil	6	10	20	20	14d	LC50	mortality	> 1000	> 300
Toxicity to soil processes											
	Microbial processes nitrification	clay	7.3	4.8	59	24	4w	LOEC63	inhibition	15	0.9
	nitrification	loam	6.9	5.1	25	24	1w	NOEC	inhibition	15	8.8

Table A3: Toxicity data for Atrazine (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Macrophyta^a											
	Avena sativa	sand	4.9	1.4	5	25	14d	EC50	growth	0.3	0.4
	Avena sativa	-	6.2	6	56	20	31d	EC50	growth	3.5	1.7
	Brassica rapa, seeds	sandy loam	-	2	18	-	15d	EC50	growth	0.5	0.7
	Brassica rapa, seeds	sandy loam	-	2	18	-	15d	EC50	growth	0.52	0.8
	Brassica rapa, seeds	sandy loam	-	2	18	-	15d	EC50	growth	3.0	4.5
	Lactuca sativa, seeds	sandy loam	-	2	18	-	15d	EC50	growth	0.5	0.7
	Lactuca sativa, seeds	sandy loam	-	2	18	-	15d	EC50	growth	1.7	2.5
	Lolium perenne, seeds	sandy loam	-	2	18	-	21d	EC50	growth	0.83	1.2
	Lolium perenne, seeds	sandy loam	-	2	18	-	21d	EC50	growth	6.4	9.6
Chronic toxicity to organisms											
Bacteriophyta											
	bacteria	loamy sand	7.8	1.66	-	28	7d	EC31	growth	10	5
	bacteria, nitrifying	loamy sand	7.8	1.66	-	28	14d	EC34	growth	10	5
	bacteria, nitrifying	loamy sand	6.5	1.5	5	30	21d	NOEC	growth	10	18
Oligochaeta											
	eudrilus eueniae (oli)	sand	-	2	5	-	31d	NOEC	mortality	32	45
Insecta											
	onychurus armatus	sand	-	2	5	15	9w	NOEC	reproduction	10	15
	onychurus apuanicus	sand	-	2	5	15	9w	NOEC	reproduction	10	15
Toxicity to soil processes											
Microbial processes											
	ATP content	organic	6.7	49	-	28	24h	EC69	decrease	5	0.05
	ATP content	organic	6.7	49	-	28	24h	EC58	decrease	10	0.1
	denitrification	silt loam	7.8	3.3	15	-	8d	NOEC	inhibition	< 3.3	< 3
	denitrification	loam	6.7	2	22	-	32h	NOEC	inhibition	< 2.6	< 3.9
Enzyme activity											
	dehydrogenase	sandy clay	7.5	3	32.5	32	5d	NOEC	inhibition	0.5	0.5
	phosphatase	loamy sand	7.8	1.66	-	28	2h	EC27	inhibition	10	5
	phosphatase	clay-loam	8.05	1.8	36	25	30d	EC16	inhibition	2	1.5
	phosphatase	clay-loam	8.05	1.8	36	25	30d	EC21	inhibition	20	10

^a Acute toxicity data are from deviating tests (formulation of less than 80% active ingredient are applied in the tests). Although these tests are of less quality, the results are still considered valuable for the derivation of the PNEC for terrestrial species (Crommentuijn et al., 1997).

Table A4: Toxicity data for Azinphos-methyl (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta lactuca sativa	OECD	7.8	1.4	12	20	14d	EC50	growth	360	540
	Insecta folsomia candida	-	-	-	-	-	-	LC50	mortality	1	1.5
	folsomia candida	-	-	-	-	-	-	LC50	mortality	1.8	2.7
	folsomia candida	sand	-	0.7	1.7	24	24h	NOLC	mortality	0.5	0.7
	folsomia candida	sand	-	0.7	1.7	13	24h	NOLC	mortality	0.5	0.7
	nebria brevicollis	sandy loam	-	3	18	20	24h	LC50	mortality	110	110
	trechus quadristia	-	-	-	-	-	-	LC50	mortality	90	135
	feronia melonaria	-	-	-	-	-	-	LC50	mortality	120	180
Chronic toxicity to organisms											
	Macrophyta lactuca sativa	OECD	7.8	1.4	12	20		NOEC	growth	100	150

Table A5: Toxicity data for Benomyl (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	% om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Oligochaeta										
	allobophora caliginosa	clay-manure	7	10	-	15	26d	NOEC	mortality	1	0.3
	allobophora caliginosa	clay-manure	7	10	-	15	26d	NOEC	growth	1	0.3
	allobophora caliginosa	clay-manure	7	10	-	15	26d	NOEC	cocoon production	1	0.3
	eisenia andrei, adults	art. soil	6	10	20	20	6w	NOEC	growth	1	0.3
	eisenia andrei, adults	art. soil	6.7	10	20	20	6w	NOEC	cocoon production	1	0.3
	eisenia andrei, adults	art. soil	6	10	20	20	6w	NOEC	reproduction	1	0.3
	lumbricus terrestris	sandy loam	7.2	6	8.5	13	14d	NOEC	growth	0.3	0.1
Toxicity to soil processes											
	Enzyme activity										
	dehydrogenase	sand	6.4	0.7	-	28	20d	NOEC	inhibition	2.3	3.4

Table A6: Toxicity data for Captafol (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta										
	eisenia foetida, > 2m	art. soil	7.0	10	5	22	28d	LC50	mortality	500	150
	lumbricus terrestris	sandy loam	6.1	11.5	2.9	10	14d	LC50	mortality	> 800	> 209
Chronic toxicity to organisms											
	Bacteriophyta										
	bacteria spec.	sandy loam	7.6	1.8	-	28	1w	EC56	growth	10	1.5
	Fungi										
	fungi spec.	sandy loam	7.6	1.8	-	28	1w	EC54	growth	10	1.5
Toxicity to soil processes											
	Microbial processes										
	nitrification	sandy loam	7.6	1.8	-	28	1w	NOEC	inhibition	> 50	> 75
	sulfur oxidation	sandy loam	7.6	1.8	-	28	4w	NOEC	inhibition	> 50	> 75
	Enzyme activity										
	amylase	sandy loam	5.5	1.8	-	28	1d	EC22	inhibition	17	8.5
	dehydrogenase	sandy loam	5.5	1.8	-	28	4d	EC19	inhibition	25	19
	invertase	sandy loam	5.5	1.8	-	28	1d	EC11	inhibition	25	19
	phosphatase	sandy loam	5.5	1.8	-	28	2h	NOEC	inhibition	> 50	> 75
	urease	sandy loam	5.5	1.8	-	28	2d	NOEC	inhibition	> 50	> 75

Table A7: Toxicity data for Captan (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta lumbricus terrestris, adult	sandy loam	6.1	11.5	2.9	10	14d	LC50	mortality	240	63
Chronic toxicity to organisms											
	Fungi fungi spec.	clay loam	7.2	1.8	-	28	2d	EC50	growth	5	0.83
	fungi spec.	sandy loam	7.8	2.9	-	28	2d	NOEC	growth	0.43	0.44
Toxicity to soil processes											
	Microbial processes ATP content	organic	7.8	49	-	28	1d	EC63	inhibition	5	0.05
	ATP content	organic	7.8	49	-	28	2d	NOEC	inhibition	5	0.5
	ATP content	agr. soil	6.4	3.1	33.6	20	48d	NOEC	inhibition	20	19
	Enzyme activity phosphatase	organic	7.2	46	-	28	2h	NOEC	inhibition	0.44	0.04
	urease	organic	7.2	46	-	28	1w	EC22	inhibition	5	0.17

Table A8: Toxicity data for Carbaryl (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Insecta										
	folsomia candida	plainfield sand	-	0.7	1.7	13	24h	LC50	mortality	2	3
	folsomia candida	plainfield sand	-	0.7	1.7	24	24h	LC50	mortality	3	4.5
Chronic toxicity to organisms											
	Bacteriophyta										
	rhizobium sp.	sandy loam	8.3	0.67	18	-	8w	LOEC38	inhibition	25000	12500
	rhizobium sp.	sandy loam	8.3	0.67	18	-	8w	LOEC20	inhibition	7500	3750
	Oligochaeta										
	lumbricus terrestrus	sandy loam	7.2	1.8	10	13	21d	NOEC	mortality	5	7.5
Toxicity to soil processes											
	Enzyme activity										
	dehydrogenase	sand	6.4	0.7	-	28	20d	NOEC	inhibition	23	35

Table A9: Toxicity data for Carbendazim (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Oligochaeta										
	eisenia andrei, adult	art. soil	6	10	20	20	3w	NOEC	growth	1.9	0.6
	eisenia andrei, adult	art. soil	6	10	20	20	3w	NOEC	cocoon production	0.6	0.2
	eisenia andrei, adult	art. soil	6	10	20	20	3w	NOEC	reproduction	0.6	0.2
	eisenia foetida	art. soil	6	10	20	-	4w	NOEC	mortality	7.1	2.1
	eisenia foetida	art. soil	6	10	20	-	4w	NOEC	cocoon production	2.2	0.7
	eisenia foetida	art. soil	6	10	20	-	4w	NOEC	appearance	2.2	0.7
	Macrophyta										
	lactuca sativa	stand. soil	7.5	1.4	12	-	2w	NOEC	growth	46	69

Table A10: Toxicity data for Carbofuran (Van de Plassche et al., 1994)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Nematoda											
	aphelenchus avenae	sand	-	2	5	22	3d	LC21	mortality	15	22.5
	aphelenchus avenae	sand	-	2	5	22	3d	LC41	mortality	30	45
	aphelenchus avenae	sand	-	2	5	22	3d	LC64	mortality	150	225
Oligochaeta											
	eisenia andrei	art. soil	7	10	5	22	14d	LC50	mortality	5	1.5
	lumbricus terrestris	loam	6.1	36	-	-	5d	LC50	mortality	12	1.0
Insecta											
	folsomia candida	sand	-	0.7	1.7	13	24h	LC50	mortality	0.15	0.2
	folsomia candida	sand	-	0.7	1.7	24	24h	LC50	mortality	0.06	0.1
	folsomia candida	sand	-	0.7	1.7	21	24h	LC50	mortality	0.06	0.1
	hypogastrura armata	sand	-	0.7	1.7	21	24h	LC50	mortality	0.22	0.3
	onychiurus justi prteri	sand	-	0.7	1.7	21	24h	LC50	mortality	1.5	2.2
	pterostichus melanarius, first instar	sand	-	0.7	1.7	20	24h	LC50	mortality	0.19	0.3
Chronic toxicity to organisms											
Bacteriophyta											
	bacteria spec.	black clay	7.2	2.1	-	28	7d	EC20	inhibition	0.5	0.2
	bacteria spec.	black clay	7.2	2.1	-	28	7d	EC22	inhibition	5	2.4
	bacteria spec.	black clay	7.2	2.1	-	28	21d	EC22	inhibition	5	2.4
Fungi											
	fungi spec.	black clay	7.2	2.1	-	28	21d	NOEC	inhibition	0.5	0.7
	fungi spec.	black clay	7.2	2.1	-	28	21d	EC30	inhibition	5	2.4
	fungi spec.	sandy loam	6.8	0.78	-	28	21d	NOEC	inhibition	0.5	0.7
	fungi spec.	sandy loam	6.8	0.78	-	28	21d	EC20	inhibition	5	2.5
Oligochaeta											
	allobophora caliginosa, adults	sand	-	2	5	20	14d	NOEC	inhibition	0.1	0.1
Toxicity to soil processes											
Enzyme activity											
	nitrogenase	sandy loam	7.8	2.9	-	28	2d	EC31	inhibition	5	1.7
	nitrogenase	sandy loam	7.8	2.9	-	28	2d	EC34	inhibition	10	3.4
	nitrogenase	sandy loam	6.2	1.6	18	28	25d	EC7	inhibition	5	7.5
	urease	organic	7.2	46	-	28	1w	EC14	inhibition	10	0.3
	urease	organic	7.2	46	-	28	2w	NOEC	inhibition	5	0.5

Table A11: Toxicity data for Chlordane (Van de Plassche et al., 1994)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta eisenia andrei	art. soil	7	10	5	22	14d	LC50	mortality	42	13
	Insecta gryllus pensilvanicus, first instar	sandy loam	7.2	1.4	2.3	27	24h	LC50	mortality	0.85	1.3
	folsomia candida	sand	-	0.7	1.7	13	24h	LC50	mortality	1.7	2.6
Chronic toxicity to organisms											
	Fungi fungi spec.	sandy loam	7.8	2.9	-	28	2d	EC50	inhibition	5	0.5
	fungi spec.	sandy loam	7.8	2.9	-	28	2d	EC55	inhibition	10	1.0
Toxicity to soil processes											
	Microbial processes nitrification	sandy loam	7.6	2.9	-	28	1w	EC92	inhibition	10	1.0
	sulphur oxidation	sandy loam	7.6	2.9	-	28	1w	EC40	inhibition	10	3.5
	Enzyme activity dehydrogenase	organic	7.2	46	-	28	2w	NOEC	inhibition	5	0.5
	nitrogenase	sandy loam	7.8	2.9	-	28	6d	NOEC	inhibition	5	5.2
	urease	organic	7.2	46	-	28	1w	EC2	inhibition	5	0.5
	urease	organic	7.2	46	-	28	1w	EC15	inhibition	10	0.5

Table A12: Toxicity data for Chlorfenvinphos (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Insecta										
	folsomia candida	plainfield sand	-	0.7	1.7	13	24h	LC50	mortality	3	4.5
	folsomia candida	plainfield sand	-	0.7	1.7	24	24h	LC50	mortality	0.7	1.0
	pterostichus melanarius, 1st. instar larvae	plainfield sand	-	0.7	1.7	20	24h	LC50	mortality	6.5	9.7

Table A13: Toxicity data for Chloridazone (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Macrophyta											
	Beta vulgaris	snady-clay loam	6.7	20.4	24	-	3w	EC50	growth	> 16	> 2.4
	Beta vulgaris	loamy sand	7.1	11.4	12	-	3w	EC50	growth	18	4.7
	Beta vulgaris	sand	7.4	5.2	6	-	3w	EC50	growth	13	7.5
	Beta vulgaris	sand	7.4	3.1	3	-	3w	EC50	growth	7	6.8
	Beta vulgaris	loam	8.1	2.2	24	-	2w	EC65	growth	7.8	11
	Beta vulgaris	loam	-	1.4	18	-	2w	EC65	growth	5.2	7.8
	Beta vulgaris	sandy loam	-	1.0	12	-	2w	EC65	growth	4.0	6.0
	Beta vulgaris	clay	7.8	1.7	73	-	2w	EC65	growth	7.5	11
	Beta vulgaris	clay	7.8	1.3	50	-	2w	EC65	growth	6.5	9.7
	Beta vulgaris	sandy clay	7.9	0.6	36	-	2w	EC65	growth	4.0	6.0
	Beta vulgaris	clay	8.1	1.3	58	-	2w	EC65	growth	7.2	11
	Beta vulgaris	slity clay	8.0	0.6	37	-	2w	EC65	growth	> 8.0	> 12
Toxicity to soil processes											
Enzyme activity											
	nitrogenase soil algae	silt loam	7.0	4.4	14	-	25d	EC98	inhibition	17	1.2
	nitrogenase soil algae	silt loam	7.0	4.4	14	-	33d	EC97	inhibition	17	1.2
	nitrogen mineralisation	sandy-clay loam	5.4	6.6	21	-	5w	EC8	inhibition	100	45
	nitrogen mineralisation	sandy-clay loam	5.4	6.6	21	-	9w	EC10	inhibition	100	45

Table A14: Toxicity data for Chlorpyrifos (Van de Plassche et al., 1994)

Type	Organism/process	Soil type	pH	% om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Oligochaeta											
	Eisenia foetida	art. soil	6	10	5	15	14d	LC50	mortality	1077	323
	Eisenia veneta	art. soil	6	10	5	15	14d	LC50	mortality	1174	352
	Aporrectodea caliginosa	art. soil	6	10	5	15	14d	LC50	mortality	755	227
	Aporrectodea longa	art. soil	6	10	5	15	14d	LC50	mortality	778	233
	Lumbricus rubellus	art. soil	6	10	5	15	14d	LC50	mortality	129	39
	Lumbricus rubellus	art. soil	6	10	5	15	14d	LC50	mortality	104	31
	Lumbricus rubellus	sandy soil	4.8	3.7	1.4	15	14d	LC50	mortality	262	212
	Lumbricus terrestris	art. soil	6	10	5	15	14d	LC50	mortality	458	137
Insecta											
	Folsomia candida	sand	-	0.7	1.7	13	24h	LC50	mortality	0.17	0.3
	Folsomia candida	sand	-	0.7	1.7	24	24h	LC50	mortality	0.03	0.04
Chronic toxicity to organisms											
Fungi											
	fungi	sandy loam	8.1	2	17	28	1w	EC40	inhibition	10	5.0
Oligochaeta											
	Eisenia foetida	art. soil	7	10	5	20	3w	NOEC	reproduction	100	30
	Eisenia veneta	sandy soil	4.8	3.7	1.4	15	14d	NOEC	reproduction	49	40
	Lumbricus rubellus	sandy soil	4.8	3.7	1.4	15	14d	NOEC	reproduction	4.6	3.7
	Lumbricus rubellus	sandy soil	4.8	3.7	1.4	15	14d	NOEC	reproduction	2.6	2.1
Toxicity to soil processes											
Microbial processes											
	nitrification	sandy soil	5.2	0.6	11	27	10d	NOEC	inhibition	10	15
	nitrification	sandy loam	8.1	2	17	28	2w	EC58	inhibition	10	1.5
	nitrification	sandy loam	8.1	2	17	28	2w	EC86	inhibition	100	15
	sulphur oxidation	sandy loam	8.1	2	17	28	4w	NOEC	inhibition	10	15
	sulphur oxidation	sandy loam	8.1	2	17	28	4w	EC15	inhibition	100	75
Enzyme activity											
	nitrogenase	sandy loam	7.8	2.9	-	28	2d	EC28	inhibition	5	1.7
	nitrogenase	sandy loam	7.8	2.9	-	28	2d	EC37	inhibition	10	3.4
	phosphatase	organic	7.2	46	-	28	2h	EC39	inhibition	5	0.2
	phosphatase	organic	7.2	46	-	28	2h	EC61	inhibition	10	0.1
	urease	organic	7.2	46	-	28	2w	NOEC	inhibition	5	0.5
	urease	organic	7.2	46	-	28	1w	EC14	inhibition	10	0.5

Table A15: Toxicity data for Cyanazine (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Avena sativa	sandy loam	5.8	9.8	15.1	20-27	5-6w	EC50	germination	0.18	0.06
	Avena sativa	sandy loam	6.0	15.5	14.2	20-27	5-6w	EC50	germination	0.21	0.04
	Avena sativa	sandy loam	6.1	20.6	15.5	20-27	5-6w	EC50	germination	0.24	0.03

Table A16: Toxicity data for 2,4-D (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
Bacteriophyta											
	Actinomycetes	alluvial	6.6	0.31	-	27	10d	EC15	growth inhibition	80	60
	Actinomycetes	-	5.7	2.75	-	27	10d	EC17	growth inhibition	80	44
	Bacteria spec.	alluvial	6.6	0.31	-	27	10d	EC32	growth inhibition	80	40
	Bacteria spec.	-	5.7	2.75	-	27	10d	EC22	growth inhibition	80	29
Fungi											
	Fungi spec.	alluvial	6.6	0.31	-	27	10d	EC43	growth inhibition	80	40
	Fungi spec.	-	5.7	2.75	-	27	10d	EC25	growth inhibition	80	29
Insecta											
	Folsomia candida, 10-12d	sandy loam	-	10	20	-	28d	NOEC	hatching	170	51
	Folsomia candida, 10-12d	sandy loam	-	10	20	-	28d	NOEC	reproduction	140	42
Toxicity to soil processes											
Microbial processes											
	basal respiration (mp)	loam	6.5	12	18	22	3d	NOEC	inhibition	20	5
	SIR respiration (mp)	loam	6.5	12	18	22	3d	NOEC	inhibition	20	5
Enzyme activity											
	phosphatase	organic	7.2	46	-	28	2h	EC46	inhibition	5	0.17
	urease	silt loam	5.4	3.7	20	22	70d	NOEC	inhibition	0.1	0.08
	urease	silt loam	5.4	3.7	20	22	20d	EC50	inhibition	1	0.08
	urease	organic	7.2	46	-	28	1w	NOEC	inhibition	5	0.5

Table A17: Toxicity data for DDT (Van de Plassche et al., 1994)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Insecta											
	Gryllus pennsylvanicus, first instar	fine sludge	-	1.4	2.3	27	24h	LC50	mortality	3.07	4.6
	Gryllus pennsylvanicus, first instar	clay loam	-	15.9	23.2	27	24h	LC50	mortality	11.75	2.2
	Gryllus pennsylvanicus, first instar	muck	-	64.6	16.5	27	24h	LC50	mortality	77.23	7.7
	Gryllus pennsylvanicus, first instar	quartz sand	-	0	0	27	18h	LC50	mortality	0.08	0.1
	Gryllus pennsylvanicus, first instar	san	-	0.5	1.7	27	18h	LC50	mortality	1.75	2.6
	Gryllus pennsylvanicus, first instar	silt loam	-	2	10.8	27	18h	LC50	mortality	4.12	6.2
	Gryllus pennsylvanicus, first instar	loam	-	6.6	14.9	27	18h	LC50	mortality	11.41	5.2
	Gryllus pennsylvanicus, first instar	clay	-	9.1	47.4	27	18h	LC50	mortality	4.23	1.4
	Gryllus pennsylvanicus, first instar	clay	-	15.9	23.8	27	18h	LC50	mortality	11.75	2.2
	Gryllus pennsylvanicus, first instar	clay	-	18.7	26.1	27	18h	LC50	mortality	20.35	3.3
	Gryllus pennsylvanicus, first instar	muck	-	39.8	22.8	27	18h	LC50	mortality	45.2	4.5
	Gryllus pennsylvanicus, first instar	muck	-	64.6	16.5	27	18h	LC50	mortality	77.23	7.7

Table A18: Toxicity data for Desmetryn (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta										
	Eisenia foetida, > 2m	art. soil	6.6-6.9	10	20	20	14d	LC50	mortality	160	48
	Macrophyta										
	Avena sativa	sandy loam	5.8	9.8	15.1	20-27	5-6w	EC50	germination	1.0	0.31
	Avena sativa	sandy loam	6.0	15.5	14.2	20-27	5-6w	EC50	germination	1.3	0.25
	Avena sativa	sandy loam	6.1	20.6	15.5	20-27	5-6w	EC50	germination	1.4	0.20
Chronic toxicity to organisms											
	Oligochaeta										
	Eisenia foetida, > 2m	art. soil	6.6-6.9	10	20	20	14d	NOEC		< 12	< 3.6

Table A19: Toxicity data for Diazinon (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Insecta											
	Folsomia candida	sand	-	0.7	1.7	13	24h	LC50	mortality	0.22	0.33
	Folsomia candida	sand	-	0.7	1.7	24	24h	LC50	mortality	0.07	0.1
	Agonum dorsale	sandy loam	-	3	18	15	24h	LC50	mortality	35	35
	Agonum dorsale	sandy loam	-	3	18	15	24h	LC50	mortality	7	7
	Euxesia notata, last instar	sandy loam	-	1.4	11	27	48h	LC50	mortality	0.36	0.54
	Feromia melanaria	sandy loam	-	3	18	15	24h	LC50	mortality	40	40
	Feromia melanaria	sandy loam	-	3	18	15	24h	LC50	mortality	10	10
	Gryllus pennsylvanicus, 1st instar	sandy loam	≤ 7	1.4	2.3	27	24h	LC50	mortality	0.4	0.6
	Gryllus pennsylvanicus, 1st instar	clay loam	≤ 7	16	23	27	24h	LC50	mortality	3.3	0.62
	Gryllus pennsylvanicus, 1st instar	muck	≤ 7	65	17	27	24h	LC50	mortality	17	1.7
	Gryllus pennsylvanicus, 1st instar	quartz sand	-	0	0	27	18h	LC50	mortality	0.08	0.12
	Gryllus pennsylvanicus, 1st instar	sand	-	0.5	1.7	27	18h	LC50	mortality	0.23	0.34
	Gryllus pennsylvanicus, 1st instar	silt loam	-	2	11	27	18h	LC50	mortality	0.84	1.26
	Gryllus pennsylvanicus, 1st instar	loam	-	6.6	15	27	18h	LC50	mortality	1.9	0.86
	Gryllus pennsylvanicus, 1st instar	clay	-	9.1	47	27	18h	LC50	mortality	1.6	0.53
	Gryllus pennsylvanicus, 1st instar	clay	-	19	26	27	18h	LC50	mortality	5.2	0.82
	Gryllus pennsylvanicus, 1st instar	muck	-	40	23	27	18h	LC50	mortality	10	1
	Trechus quadristriatus	sandy loam	-	3	18	15	24h	LC50	mortality	8	8
	Trechus quadristriatus	sandy loam	-	3	18	15	24h	LC50	mortality	4	4
Chronic toxicity to organisms											
Fungi											
	Fungi spec.	sandy loam	8.1	2	17	28	7d	NOEC	inhibition	10	15
Toxicity to soil processes											
Microbial processes											
	ATP content	organic	6.7	49	-	28	24h	EC56	inhibition	5	0.05
	ATP content	organic	6.7	49	-	28	24h	EC55	inhibition	10	0.10
Enzyme activity											
	amidase	muscatine	5.6	4.5	28	-	30min	NOEC	inhibition	1	0.67
	dehydrogenase	organic	7.2	46	-	28	7d	NOEC	inhibition	5	0.50
	phosphatase	organic	7.2	46	-	28	2h	EC42	inhibition	5	0.17
	phosphatase	organic	7.2	46	-	28	2h	EC52	inhibition	10	0.10
	urease	organic	7.2	46	-	28	7d	NOEC	inhibition	5	0.50

Table A20: Toxicity data for Dichlorvos (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta										
	Lampito mauritii	clay	-	<2	-	-	24h	LC50	mortality	18	27
	Lampito mauritii	clay	-	<2	-	-	48h	LC50	mortality	17	26
	Lampito mauritii	clay	-	<2	-	-	72h	LC50	mortality	16	24
	Lampito mauritii	clay	-	<2	-	-	96h	LC50	mortality	15	23

Table A21: Toxicity data for Dieldrin (Van de Meent et al., 1990b)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Insecta											
	Folsomia candida	-	-	0.7	1.7	-	24h	NOLC	mortality	0.1	0.15
	Folsomia candida	-	-	0.7	1.7	-	24h	LC50	mortality	0.22	0.33
	Gryllus pennsylvanicus	-	-	1.4	2.3	-	24h	LC50	mortality	0.27	0.40
	Gryllus pennsylvanicus	-	-	1.4	10.3	-	24h	LC50	mortality	0.27	0.40
Chronic toxicity to organisms											
Bacteriophyta											
	Bacteria spec.	-	6.5	0.7	-	-	5w	NOEC	inhibition	20	30
	Bacteria spec.	-	7.6	8.1	-	-	5w	NOEC	inhibition	20	7.4
	Bacteria spec.	-	7.9	2.9	-	-	5w	NOEC	inhibition	20	21
Fungi											
	Fungi spec.	-	6.5	0.7	-	-	5w	NOEC	inhibition	20	30
Toxicity to soil processes											
Microbial processes											
	Respiration	-	6.7	49	-	28	2d	NOEC	inhibition	10	1
Enzyme activity											
	Amylase	-	7.4	2.9	-	-	2d	NOEC	inhibition	10	10
	Invertase	-	7.4	2.9	-	-	2d	NOEC	inhibition	10	10

Table A22: Toxicity data for Dimethoate (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta										
	Allophora chlorotica, 6g	clay	7.0	low	60	15	7d	LC50	mortality	18	27
	Aporrectodea tuberculata	OECD	5.9	10	20	13	14d	LC50	mortality	56	17

Table A23: Toxicity data for Dinoseb (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Microbial processes										
	C ₂ H ₄ reduction	loamy sand	6.8	7.3	-	29	4d	NOEC	inhibition	1.5	0.6
	nitrogen mineralisation	loss	7.6	2.5	4.3	29	14d	NOEC	inhibition	10	12
	nitrogen mineralisation	loss	7.4	1.3	2.3	29	14d	NOEC	inhibition	10	15
	ureum mineralisation	loss	7.6	2.5	4.3	29	28d	NOEC	inhibition	5	6
	ureum mineralisation	loss	7.4	1.3	2.3	29	28d	NOEC	inhibition	1	1.5

Table A24: Toxicity data for Dinoterb (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Bacteriophyta										
	Bacteria spec.	natural	6.8	2.5	-	25	20d	EC54	growth inhibition	93	11
	Bacteria spec.	natural	6.8	2.5	-	25	20d	EC49	growth inhibition	93	37
	Bacteria spec.	natural	6.8	2.5	-	25	20d	EC54	growth inhibition	93	11
	Bacteria spec.	natural	6.8	2.5	-	25	20d	EC70	growth inhibition	93	11
	Bacteria spec.	natural	7.4	4.2	-	25	20d	EC65	growth inhibition	93	6.6
	Bacteria spec.	natural	7.4	4.2	-	25	20d	EC51	growth inhibition	93	6.6
	Bacteria spec.	natural	7.4	4.2	-	25	20d	EC42	growth inhibition	93	22
	Bacteria spec.	natural	7.4	4.2	-	25	20d	EC36	growth inhibition	93	22

Table A25: Toxicity data for Disulfoton (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Insecta										
	Folsomia candida	plainfield sand	-	0.7	1.7	13	24h	LC50	mortality	0.2	0.3
	Folsomia candida	plainfield sand	-	0.7	1.7	24	24h	LC50	mortality	0.05	0.07

Table A26: Toxicity data for Diuron (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lolium rigidum	clay loam	-	2	30	22	14d	EC50	growth	0.30	0.45
	Torilis arvensis	clay loam	-	2	30	22	14d	EC50	growth	0.16	0.24
Toxicity to soil processes											
	Microbial processes										
	Nitrification	silt clay	4.9	3.5	43	24	6w	NOEC	inhibition	2	1.7
	Nitrification	silt loam	5.0	3.5	14	24	2w	NOEC	inhibition	2	1.7
	Nitrification	-	8.1	0.4	8	20	7d	EC90	inhibition	50	7.5
	Nitrification	-	6.0	1.2	8	20	7d	EC80	inhibition	50	7.5
	Nitrification	-	7.3	3.3	33	20	7d	EC19	inhibition	50	22.7
	Nitrification	-	7.7	4.2	42	20	7d	EC20	inhibition	50	11.9

Table A27: Toxicity data for DNOC (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta Alloobophora chlorotica	sand	-	2	5	15	7d	LC50	mortality	13	19

Table A28: Toxicity data for Endosulfan (Van de Plassche et al., 1994)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	OECD	7.8	1.4	12	-	14d	EC50	growth	> 1000	> 2143
	Oligochaeta										
	Pheretima posthuma	OECD	-	-	-	-	24h	LC50	mortality	5.01	1.5
	Eisenia andrei	art. soil	7	10	5	22	28d	LC50	mortality	6.7	2.0
	Lumbricus terrestris	sandy loam	6.1	11.5	2.9	10	14d	LC50	mortality	9.0	2.4
Chronic toxicity to organisms											
	Macrophyta										
	Lactuca sativa	OECD	7.8	1.4	12	-	14d	NOEC	growth	320	480
	Algae										
	Algae	red laterite	8.1	2	-	27	20d	NOEC	growth	25	37
	Algae	red laterite	8.1	2	-	27	20d	EC12	growth	50	37
	Algae	red laterite	8.1	2	-	27	20d	EC52	growth	100	15
	Algae	red laterite	8.1	2	-	-	20d	EC39	growth	10	5
	Algae	red laterite	8.1	2	-	-	20d	EC68	growth	50	7.5
Toxicity to soil processes											
	Microbial processes										
	Nitrification	sandy loam	5.7	3.2	8	25	30d	EC50	inhibition	960	90
	Nitrification	sandy loam	5.7	3.2	8	25	30d	EC50	inhibition	> 4500	> 422
	Nitrification	sandy loam	5.7	3.2	8	25	40d	EC50	inhibition	550	52
	Nitrification	sandy loam	5.7	3.2	8	25	40d	EC50	inhibition	> 2400	> 225
	Nitrification	silt loam	5.0	5.4	14	25	50d	EC50	inhibition	525	29
	Nitrification	silt loam	5.0	5.4	14	25	50d	EC50	inhibition	1130	63
	Nitrification	silt loam	5.0	5.4	14	25	65d	EC50	inhibition	390	22
	Nitrification	silt loam	5.0	5.4	14	25	65d	EC50	inhibition	870	48

Table A29: Toxicity data for Endrin (Van de Plassche et al., 1994)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Insecta Folsomia candida	sand	-	0.7	1.7	13	24h	LC50	mortality	0.19	0.28

Table A30: Toxicity data for Ethoprophos (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
Microbial processes											
	Nitrification	sandy loam	6.1	1.7	-	28	2w	EC32	inhibition	30	15
	Sulphur oxidation	sandy loam	6.1	1.7	-	28	4w	EC8	inhibition	5	7.5
	Sulphur oxidation	sandy loam	6.1	1.7	-	28	4w	EC77	inhibition	30	4.5
	Oxygen consumption (bacteria)	sandy loam	6.1	1.7	-	5	2d	EC13	inhibition	5	3.8
	Oxygen consumption (fungi)	sandy loam	6.1	1.7	-	5	2d	EC10	inhibition	30	45
Enzyme activity											
	Dehydrogenase	organic	7.2	46	-	28	1w	EC33	inhibition	10	0.33
	Dehydrogenase	organic	7.2	46	-	28	1w	NOEC	inhibition	5	0.5
	Phosphatase	organic	7.2	46	-	28	2h	EC41	inhibition	5	0.17
	Phosphatase	organic	7.2	46	-	28	2h	EC49	inhibition	10	0.33
	Urease	clay loam	7.2	1.8	-	28	2d	EC17	inhibition	5	3.8
	Urease	clay loam	7.2	1.8	-	28	2d	EC25	inhibition	10	5.0

Table A31: Toxicity data for Fenitrothion (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Insecta										
	Folsomia candida	plainfield sand	-	0.7	1.7	13	24h	LC50	mortality	0.3	0.45
	Folsomia candida	plainfield sand	-	0.7	1.7	24	24h	LC50	mortality	0.3	0.45

Table A32: Toxicity data for Heptachlor (Van de Plassche et al., 1994)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta										
	Pheretima posthuma, adults	artificial	6	10	5	25	14d	LC50	mortality	32	9.6
	Insecta										
	Folsomia candida	sand	-	0.7	1.7	13	24h	LC50	mortality	0.18	0.27
	Folsomia candida	sand	-	0.7	1.7	24	24h	LC50	mortality	1.9	2.9
	Folsomia candida	sand	-	0.7	1.7	21	24h	LC50	mortality	0.79	1.2
	Hypogastrura armata	sand	-	0.7	1.7	21	24h	LC50	mortality	2.2	3.3
	Onychiurus justus porteri	sand	-	0.7	1.7	21	24h	LC50	mortality	3.6	5.4
	Gryllus pennsylvanicus, 1st instar	sandy loam	-	1.4	2.3	27	24h	LC50	mortality	0.09	0.13
	Gryllus pennsylvanicus, 1st instar	clay loam	-	16	32	27	24h	LC50	mortality	0.73	0.14
	Gryllus pennsylvanicus, 1st instar	muck	-	65	17	27	24h	LC50	mortality	4.2	0.42
	Pterostichus melanarius, 1st instar	sand	-	0.7	1.7	20	24h	LC50	mortality	0.03	0.04

Table A33: Toxicity data for Heptenophos (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta Eisenia foetida	art. soil	6.0	10	20	20	14d	LC50	mortality	210	63

Table A34: Toxicity data for Isoproturon (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Microbial processes										
	Nitrification	sandy-clay loam	7.95	0.45	-	20	8d	NOEC	inhibition	10	15

Table A35: Toxicity data for Lindane (Van de Meent et al., 1990b)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Insecta											
	Folsomia candida	-	-	0.7	1.7	-	24h	NOLC	mortality	0.01	0.01
	Folsomia candida	-	-	0.7	1.7	13	24h	LC50	mortality	0.15	0.22
	Folsomia candida	-	-	0.7	1.7	24	24h	LC50	mortality	0.19	0.28
Oligochaeta											
	Eisenia fetida	-	6.1	11.5	2.9	-	14d	LC50	mortality	113	29
	Lumbricus terrestris	-	7	10	5	-	28d	LC50	mortality	59	18
Chronic toxicity to organisms											
Oligochaeta											
	Lumbricus rubellus	-	-	3.4	17	-	6w	NOEC	reproduction	10	8.8

Table A36: Toxicity data for Linuron (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Brassica rapa	sandy loam	-	2	18	-	15d	EC50	growth	2.7	4.0
	Lactuca sativa	sandy loam	-	2	18	-	15d	EC50	growth	1.0	1.5
	Lolium perenne	sandy loam	-	2	18	-	21d	EC50	growth	3.8	5.7
Toxicity to soil processes											
	Microbial processes										
	Nitrification	loamy sand	7.8	1.66	-	28	2w	EC52	inhibition	10	1.5
	Enzyme activity										
	Amylase	loamy sand	7.8	1.66	-	28	1d	EC33	inhibition	10	5.0
	Phosphatase	loamy sand	7.8	1.66	-	28	2h	EC33	inhibition	10	5.0

Table A37: Toxicity data for Malathion (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Cyanophyta											
	Anabaena cylindrica	sand	6.1	0	-	25	1h	EC50	inhibition	100	150
	Aulosira spec.	sand	6.1	0	-	25	1h	EC50	inhibition	100	150
	Chloroglorea fritchii	sand	6.1	0	-	25	1h	EC80	inhibition	100	150
	Cylindrospermum muscicola	sand	6.1	0	-	25	8d	EC80	inhibition	100	150
	Nostoc spec.	sand	6.1	0	-	25	17d	EC80	inhibition	100	150
	Nostoc muscorum	sand	6.1	0	-	25	8d	EC50	inhibition	100	150
	Westiellopsis spec.	sand	6.1	0	-	25	1h	EC30	inhibition	100	150
Nematoda											
	Aphelenchus avenae	sand	-	2	-	22	72h	LC13	mortality	15	23
	Aphelenchus avenae	sand	-	2	-	22	72h	LC56	mortality	500	750
Chronic toxicity to organisms											
Bacteriophyta											
	Azotobacter spp.	loamy	7.1	3.8	20	20	7d	NOEC	inhibition	50	39
	Bacteria spec.	loamy	7.1	3.8	20	20	7d	NOEC	inhibition	6.5	5
Toxicity to soil processes											
Microbial processes											
	nitrification (NH ₄)	sandy loam	7.7	1	17	30	7d	EC29	inhibition	10	5
	nitrification (NH ₄)	sandy loam	7.7	1	17	30	7d	EC41	inhibition	50	25
	nitrification (urea)	sandy loam	7.7	1	17	30	7d	EC15	inhibition	10	7.5
	nitrification (urea)	sandy loam	7.7	1	17	30	7d	EC82	inhibition	50	7.5
Enzyme activity											
	amidase	-	5.6	4.5	28	-	30min	NOEC	inhibition	1	0.67
	ethylene reduction	clay loam	7.2	1.8	-	28	48h	EC51	inhibition	5	0.75
	ethylene reduction	clay loam	7.2	1.8	-	28	48h	EC55	inhibition	10	1.5
	glucanase	silt loam	5.4	3.7	20	22	16w	EC50	inhibition	15	1.2
	phosphatase	organic	7.2	46	-	28	2h	EC32	inhibition	5	0.17
	phosphatase	organic	7.2	46	-	28	2h	EC48	inhibition	10	0.33
	urease	organic	7.2	46	-	28	7d	EC10	inhibition	5	0.5
	urease	organic	7.2	46	-	28	7d	EC21	inhibition	10	0.33
	urease	sandy clay	5.8	3.2	26	21	9w	EC45	inhibition	1000	312
	urease	silt loam	5.4	3.7	20	21	48h	EC15	inhibition	200	81
	urease	silt loam	5.4	3.7	20	21	48h	EC35	inhibition	1000	270
	urease	sandy loam	7.7	1	17	30	72h	EC30	inhibition	10	5
	urease	sandy loam	7.7	1	17	30	72h	EC44	inhibition	50	25

Table A38: Toxicity data for MCPA (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Bacteriophyta										
	Actinomycetes	alluvial	6.6	0.31	-	27	10d	EC21	growth	80	40
	Actinomycetes	-	5.7	2.75	-	27	10d	EC20	growth	80	40
	Bacteria spec.	alluvial	6.6	0.31	-	27	10d	EC35	growth	80	40
	Bacteria.spec.	-	5.7	2.75	-	27	10d	EC25	growth	80	29
	Fungi										
	Fungi spec.	alluvial	6.6	0.31	-	27	10d	EC57	growth	80	12
	Fungi spec.	-	5.7	2.75	-	27	10d	EC33	growth	80	29

Table A39: Toxicity data for Methomyl (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Insecta											
	Folsomia candida	plainfield sand	-	0.7	1.7	13	24h	LC50	mortality	0.06	0.09
	Folsomia candida	plainfield sand	-	0.7	1.7	24	24h	LC50	mortality	0.2	0.30
	Pterostichus melanarius, 1st instar larvae	plainfield sand	-	0.7	1.7	20	24h	LC50	mortality	0.5	0.75

Table A40: Toxicity data for Metolachlor (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Bacteriophyta										
	Bacteria spec.	loamy sand	7.8	1.7	-	28	1w	EC31	population growth	10	5.0
	Macrophyta										
	Zea mais	clay loam	7.5	2.3	33	24	9d	EC30		2.1	0.91
	Zea mais	clay loam	7.5	2.3	33	24	9d	EC42		3.2	1.4
	Zea mais	clay loam	7.5	2.3	33	24	9d	EC58		4.2	0.55
	Zea mais	clay loam	7.5	2.3	33	24	9d	EC64		5.3	0.69
Toxicity to soil processes											
	Microbial processes										
	Nitrification	sandy	8.2	0.6	11	27	10d	NOEC	inhibition	10	15
	Nitrification	loamy sand	7.8	1.7	-	28	2w	EC30	inhibition	10	5
	Enzyme activity										
	Nitrogenase	loam	7.1	3.8	20	28	24h	NOEC	inhibition	300	237
	Phosphatase	loamy sand	7.8	1.7	-	28	2h	EC49	inhibition	10	5

Table A41: Toxicity data for Mevinphos (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Insecta											
	Euxesta notata, last instar larvae	sandy loam	-	1.4	10.5	27	48h	LC50	mortality	91	136
	Gryllus pennsylvanicus, 1st instar nymphs	sandy loam	-	1.4	10.5	27	24h	LC50	mortality	30	45

Table A42: Toxicity data for Parathion-ethyl (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta										
	Allolobophora chlorotica	sand	-	2	5	15	7d	LC50	mortality	80	120
	Insecta										
	Euxesia notata, 1st instar	loam	-	1.4	10	27	48h	EC50	pupation	0.72	1.1
	Folsomia candida	sand	-	0.7	1.7	13	24h	LC50	mortality	0.14	0.21
	Folsomia candida	sand	-	0.7	1.7	24	24h	LC50	mortality	0.03	0.04
	Gryllus pennsylvanicus, 1st instar	sandy loam	≤ 7	1.4	2.3	27	24h	LC50	mortality	0.46	0.69
	Gryllus pennsylvanicus, 1st instar	clay loam	≤ 7	16	23	27	24h	LC50	mortality	4.3	0.81
	Gryllus pennsylvanicus, 1st instar	muck	≤ 7	65	17	27	24h	LC50	mortality	21	2.1
	Gryllus pennsylvanicus, 1st instar	quartz sand	-	0	0	27	18h	LC50	mortality	0.02	0.03
	Gryllus pennsylvanicus, 1st instar	sand	-	0.5	1.6	27	18h	LC50	mortality	0.25	0.37
	Gryllus pennsylvanicus, 1st instar	silt loam	-	2	11	27	18h	LC50	mortality	0.67	1.0
	Gryllus pennsylvanicus, 1st instar	loam	-	6.4	15	27	18h	LC50	mortality	1.8	0.84
	Gryllus pennsylvanicus, 1st instar	clay	-	9.1	47	27	18h	LC50	mortality	1.5	0.49
	Gryllus pennsylvanicus, 1st instar	clay	-	19	25	27	18h	LC50	mortality	6	0.95
	Gryllus pennsylvanicus, 1st instar	muck	-	40	19	27	18h	LC50	mortality	14	1.4
Chronic toxicity to organisms											
	Fungi										
	Fungi spec.	sandy loam	7.8	2.9	-	28	48h	NOEC	growth	5	5.2
	Bacteriophyta										
	Bacteria spec.	sandy loam	7.8	2.9	-	28	48h	NOEC	growth	5	5.2
	Algae										
	Algae	red laterite	8.1	2	-	27	21d	NOEC	growth	5	7.5
	Algae	red laterite	8.1	2	-	27	21d	EC48	growth	10	5.0
	Algae	red laterite	8.1	2	-	27	21d	EC59	growth	50	7.5
	Oligochaeta										
	Eisenia andrei, adult	artificial	6	10	20	20	21d	EC81	growth	10	0.3
	Eisenia andrei, adult	artificial	6	10	20	20	21d	EC68	growth	18	0.54
	Eisenia andrei, adult	artificial	6	10	20	20	21d	EC59	growth	32	0.96
	Eisenia andrei, adult	artificial	6	10	20	20	21d	EC85	growth	56	1.7
	Eisenia andrei, adult	artificial	6	10	20	20	14d	NOEC	growth	16	4.8
	Eisenia andrei, adult	artificial	6	10	20	20	21d	NOEC	reproduction	10	3.0
	Eisenia andrei, adult	artificial	6	10	20	20	21d	NOEC	reproduction	18	5.4
	Eisenia andrei, adult	artificial	6	10	20	20	21d	NOEC	reproduction	32	9.6
	Eisenia andrei, adult	artificial	6	10	20	20	21d	NOEC	reproduction	56	16.8
	Eisenia andrei, adult	artificial	6	10	20	20	14d	NOEC	reproduction	5	1.5
	Eisenia andrei, adult	artificial	6	10	20	20	14d	NOEC	mortality	50	15

Table A42: Toxicity data for Parathion-ethyl (Crommentuijn et al., 1997c) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Microbial processes										
	nitrification	sandy loam	7.7	1	17	30	7d	EC36	inhibition	10	5
	nitrification	sandy loam	7.7	1	17	30	7d	EC31	inhibition	50	25
	nitrification	sandy loam	7.7	1	17	30	7d	EC54	inhibition	10	1.5
	nitrification	sandy loam	7.7	1	17	30	7d	EC83	inhibition	50	7.5
	ureum hydrolysis	sandy loam	7.7	1	17	30	72h	EC38	inhibition	10	5.0
	ureum hydrolysis	sandy loam	7.7	1	17	30	72h	EC61	inhibition	50	7.5
	Enzyme activity										
	ethylene reduction	clay loam	7.2	1.8	-	28	48h	NOEC	inhibition	5	7.5
	urease	organic	7.2	46	-	28	7d	NOEC	inhibition	5	0.5

Table A43: Toxicity data for Parathion-methyl (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Insecta											
	Folsomia candida	plainfield sand	-	0.7	1.7	13	24h	LC50	mortality	0.3	0.45
	Folsomia candida	plainfield sand	-	0.7	1.7	24	24h	LC50	mortality	0.3	0.45

Table A44: Toxicity data for Propachlor (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Bacteriophyta										
	Bacteria spec	alluvial	6.6	0.31	-	27	10d	EC18	population growth	80	60
	Bacteria spec.	-	5.7	2.75	-	27	10d	EC13	population growth	80	44
	Fungi										
	Fungi spec.	alluvial	6.6	0.31	-	27	10d	EC29	population growth	80	40
	Fungi spec.	-	5.7	2.75	-	27	10d	EC17	population growth	80	44

Table A45: Toxicity data for Propoxur (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Microbial processes										
	nitrification	sandy-clay loam	8.3	0.67	18	26	2w	EC29	inhibition	25	13
	nitrification	sandy-clay loam	8.3	0.67	18	26	8w	NOEC	inhibition	25	37
	nitrification	sandy-clay loam	8.3	0.67	18	26	16w	EC13	inhibition	25	19
	nitrification	sandy-clay loam	8.3	0.67	18	26	16w	EC17	inhibition	125	94
	nitrification	sandy-clay loam	8.3	0.67	18	26	16w	EC33	inhibition	1250	625

Table A46: Toxicity data for Simazine (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Macrophyta											
	Avena sativa	sandy loam	5.8	9.8	15.1	20-27	5-6w	EC50	germination	0.43	0.13
	Avena sativa	sandy loam	6.0	15.5	14.2	20-27	5-6w	EC50	germination	0.74	0.14
	Avena sativa	sandy loam	6.1	20.6	15.5	20-27	5-6w	EC50	germination	0.94	0.14
	Brassica rapa	sandy loam	-	2	18	-	15d	EC50	growth	9.1	4
	Brassica rapa	sandy loam	-	2	18	-	15d	EC50	growth	0.48	0.72
	Lactuca sativa	sandy loam	-	2	18	-	15d	EC50	growth	11.8	18
	Lolium perenne	sandy loam	-	2	18	-	21d	EC50	growth	7.5	11
Chronic toxicity to organisms											
Fungi											
	Fungi spec.	clay	9.3	0.78	-	27	7d	LOEC28	species composition	4	2
Bacteriophyta											
	Nitrifying bacteria	silt loam	8.4	3.5	25	20	4w	NOEC	population growth	10	8.6
	Nitrifying bacteria	clay loam	8.4	3.5	30	20	4w	NOEC	population growth	10	8.6
	Nitrifying bacteria	loam	7.1	3.8	30	20	4w	NOEC	population growth	10	7.9
	Nitrifying bacteria	clay loam	8.2	0.6	30	20	4w	NOEC	population growth	10	15
Toxicity to soil processes											
Microbial processes											
	denitrification	clay loam	7.7	5.1	31	30	7d	NOEC	inhibition	> 100	> 59
	denitrification	silty clay	7.9	7.1	40	30	7d	NOEC	inhibition	> 100	> 42
	denitrification	sandy-clay loam	8.1	2.0	19	30	7d	NOEC	inhibition	> 100	> 150
	nitrification	-	8.1	0.4	8	20	7d	EC31	inhibition	50	25
	nitrification	-	6.0	1.2	8	20	7d	EC22	inhibition	50	25
	nitrification	-	7.3	3.3	33	20	7d	EC0	inhibition	50	45
	nitrification	-	7.7	4.2	42	20	7d	EC0	inhibition	50	36

Table A47: Toxicity data for 2,4,5-T (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Avena sativa	agr. soil	7.5	1.4	11.5	-	2w	EC50	germination	> 32	> 48
	Avena sativa	agr. soil	7.5	1.4	11.5	-	2w	EC50	growth	0.32	0.48
	Lactuca sativa	agr. soil	7.5	1.4	11.5	-	2w	EC50	germination	1.0	1.5
	Lactuca sativa	agr. soil	7.5	1.4	11.5	-	2w	EC50	growth	0.43	0.64
	Oligochaeta										
	Eisenia foetida	agr. soil	6	10	20	-	4w	LC50	mortality	> 16000	> 4799
	Eisenia foetida	agr. soil	6	10	20	-	4w	EC50	cocoon production	2900	870
	Enchytraeus albidus	agr. soil	6.5	10	20	12	4w	LC50	mortality	14000	4199
Chronic toxicity to organisms											
	Macrophyta										
	Avena sativa	agr. soil	7.5	1.4	11.5	-	2w	NOEC	germination & growth	0.32	0.48
	Lactuca sativa	agr. soil	7.5	1.4	11.5	-	2w	NOEC	germination & growth	0.1	0.15
	Oligochaeta										
	Eisenia foetida	agr. soil	6	10	20	-	4w	NOEC	cocoon production	500	150
Toxicity to soil processes											
	Microbial processes										
	nitrification	sand	5.2	6	5	-	28d	NOEC	inhibition	> 1800	> 900
	nitrification	loam	7.0	3	18	-	28d	NOEC	inhibition	430	430
	respiration	sand	5.2	6	3	-	5h	NOEC	inhibition	180	90
	respiration	loam	7.0	3	18	-	5h	NOEC	inhibition	> 1200	> 1200

Table A48: Toxicity data for Thiram (Van de Plassche et al., 1994)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Bacteriophyta										
	Bacteria spec.	sandy loam	7.8	2.9	-	28	2d	EC52	inhibition	5	0.52
	Bacteria spec.	sandy loam	7.8	2.9	-	28	2d	EC61	inhibition	10	1.0
	Bacteria spec.	clay loam	7.2	1.8	-	-	2d	EC40	inhibition	5	2.5
	Fungi										
	Fungi spec.	sandy loam	7.8	2.9	-	28	2d	EC55	inhibition	5	0.52
	Fungi spec.	sandy loam	7.8	2.9	-	28	2d	EC60	inhibition	10	1.0
	Fungi spec.	clay loam	7.2	1.8	-	-	2d	EC50	inhibition	5	0.75
Toxicity to soil processes											
	Microbial processes										
	ATP amount	brown earth	6.9	1.9	-	-	42-56d	EC3	inhibition	5	7.5
	ATP amount	brown earth	6.9	1.9	-	-	42-56d	EC17	inhibition	50	37
	arginine ammonification	brown earth	6.9	1.9	-	-	42-56d	EC9	inhibition	5	7.5
	arginine ammonification	brown earth	6.9	1.9	-	-	42-56d	EC16	inhibition	50	37
	arginine ammonification	peat	6.6	20	-	-	42-56d	NOEC	inhibition	30	4.5
	arginine ammonification	peat	6.6	20	-	-	42-56d	EC8	inhibition	100	15
	nitrification	loamy soil	7.3	2.3	-	-	4w	NOEC	inhibition	10	13
	nitrification	sandy loam	7.1	1.9	-	-	4w	NOEC	inhibition	1	1.5
	Enzyme activity										
	FDH hydrolysis	brown earth	6.9	1.9	-	-	42-56d	EC14	inhibition	5	3.8
	FDH hydrolysis	brown earth	6.9	1.9	-	-	42-56d	EC36	inhibition	50	25
	FDH hydrolysis	peat	6.6	20	-	-	42-56d	EC3	inhibition	3	0.45
	FDH hydrolysis	peat	6.6	20	-	-	42-56d	EC4	inhibition	10	1.5
	FDH hydrolysis	peat	6.6	20	-	-	42-56d	EC10	inhibition	30	4.5
	FDH hydrolysis	peat	6.6	20	-	-	42-56d	EC30	inhibition	100	5.0
	nitrogenase	loamy soil	7.3	2.3	-	-	1w	NOEC	inhibition	5	6.5
	phosphatase	organic	7.2	46	-	28	2h	EC35	inhibition	5	0.17
	phosphatase	organic	7.2	46	-	28	2h	EC52	inhibition	10	0.10
	urease	organic	7.2	46	-	28	1w	EC38	inhibition	5	0.17
	urease	organic	7.2	46	-	28	1w	EC43	inhibition	10	0.33

Table A49: Toxicity data for Tri-alleate (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Macrophyta											
	Avena sativa	sandy loam	5.5	2.0	-	23-35	14d	LC50	mortality	80	120
	Avena sativa	sandy loam	5.5	2.0	-	23-35	14d	EC50	growth	3	4.5
	Casuarine distyla	sandy loam	5.5	2.0	-	23-35	56d	LC50	mortality	655	982
	Casuarine distyla	sandy loam	5.5	2.0	-	23-35	56d	EC50	growth	30	45
	Cucumis sativus	sandy loam	5.5	2.0	-	23-35	14d	EC50	growth	50	75
	Glycine max	sandy loam	5.5	2.0	-	23-35	14d	LC50	mortality	1150	1725
	Glycine max	sandy loam	5.5	2.0	-	23-35	14d	EC50	growth	415	622
	Eucalyptus eximia	sandy loam	5.5	2.0	-	23-35	56d	EC50	growth	2000	3000
Chronic toxicity to organisms											
Macrophyta											
	Avena sativa, seedling	sandy loam	6.7	3.7	-	-	28d	EC30	population growth	0.12	0.03
	Avena sativa, seedling	sandy loam	6.7	3.7	-	-	28d	EC45	population growth	0.22	0.06
	Avena sativa, seedling	sandy loam	6.7	3.7	-	-	28d	EC72	population growth	0.36	0.03
	Avena sativa, seedling	sandy loam	6.7	3.7	-	-	28d	EC17	population growth	0.12	0.05
	Avena sativa, seedling	sandy loam	6.7	3.7	-	-	28d	EC40	population growth	0.22	0.06
	Avena sativa, seedling	clay	-	2.0	-	-	28d	EC32	population growth	0.12	0.06
	Avena sativa, seedling	clay	-	2.0	-	-	28d	EC55	population growth	0.18	0.03
	Avena sativa, seedling	loam	-	8.0	-	-	28d	EC20	population growth	0.36	0.04
	Avena sativa, seedling	loam	-	8.0	-	-	28d	EC40	population growth	0.51	0.06
Insecta											
	Onychiurus firmatus	sand	5.3	1.1	-	15	8w	LC67	mortality	5.5	0.82

Table A50: Toxicity data for Triazophos (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Macrophyta Lactuca sativa	art. soil	7.8	1.4	12	20	14d	NOEC	growth	32	48

Table A51: Toxicity data for Tributyltinchloride (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg ww ⁻¹)
Toxicity to soil processes											
	Microbial processes										
	Esterase	gleyic luvisol	7.9	4.9	-	18	14d	NOEC	inhibition	9.1	5.6

Table A52: Toxicity data for Trichlorfon (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Insecta										
	Gryllus pennsylvanicus, 1st instar nymphs	sandy loam	-	1.4	10.5	27	24h	LC50	mortality	17	26

Table A53: Toxicity data for Trifluarin (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Bacteriophyta										
	Bacteria spec.	clay	7.4	8.1	41	22	1w	NOEC	population growth	0.09	0.03
	Bacteria spec.	clay	7.4	8.1	41	22	1w	EC38	population growth	5.0	0.62
	Bacteria spec.	alluvial	6.6	0.31	-	27	10d	EC28	population growth	80	40
	Bacteria spec.	-	5.7	2.75	-	27	10d	EC16	population growth	80	44
	Fungi										
	Fungi spec.	alluvial	6.6	0.31	-	27	10d	EC29	population growth	80	40
	Fungi spec.	-	5.7	2.75	-	27	10d	EC17	population growth	80	44
Toxicity to soil processes											
	Microbial processes										
	population growth	loamy sand	7.8	1.66	-	28	1w	EC34	population growth	10	5
	Enzyme activity										
	phosphatase	loamy sand	7.8	1.66	-	28	2h	EC47	inhibition	10	5

Table A54: Toxicity data for Triphenyltin-chloride (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta										
	Eisenia andrei, adult	art. soil	6	10	20	20	3w	LC50	mortality	57	29
	Eisenia andrei, adult	art. soil	6	10	20	20	3w	EC50	cocoon production	28	14
Chronic toxicity to organisms											
	Oligochaeta										
	Eisenia andrei, adult	art. soil	6	10	20	20	3w	NOEC	growth	10	3
	Eisenia andrei, adult	art. soil	6.7	10	20	20	3w	NOEC	cocoon production	10	3
	Eisenia andrei, adult	art. soil	6	10	20	20	3w	NOEC	reproduction	10	3

Table A55: Toxicity data for Triphenyltin-hydroxide (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Isopoda										
	Porcellio scaber	poplar litter	7.5	> 30	0	15	25d	NOEC		10	1
	Insecta										
	Folsomia candida	art. soil	5.8-5.9	10	25	20	35d	LC50	mortality	1120	336
	Folsomia candida	art. soil	5.8-5.9	10	25	20	35d	LC50	mortality	1150	345
	Folsomia candida	art. soil	5.8-5.9	10	25	20	35d	LC50	mortality	1550	465
	Folsomia candida	art. soil	5.8-5.9	10	25	20	35d	EC50	growth	1990	597
	Folsomia candida	art. soil	5.8-5.9	10	25	20	35d	EC50	growth	2010	603
	Folsomia candida	art. soil	5.8-5.9	10	25	20	35d	EC50	growth	2030	609
	Folsomia candida	art. soil	5.8-5.9	10	25	20	35d	EC50	population growth	130	39
	Folsomia candida	art. soil	5.8-5.9	10	25	20	35d	EC50	population growth	230	69
	Folsomia candida	art. soil	5.8-5.9	10	25	20	35d	EC50	population growth	510	153

Table A56: Toxicity data for Zineb (Crommentuijn et al., 1997c)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Microbial processes										
	ATP content	sandy loam	6.4	3.2	33.6	20	48d	NOEC	inhibition	40	37

APPENDIX B: TERRESTRIAL TOXICITY DATA FOR AROMATICS

Table B1: Toxicity data for Phenol (Denneman & Van Gestel, 1999; Hulzebos et al., 1993)

Type	Organisms	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	<i>lactuca sativa</i>	OECD	7.5	1.4	12		7d	EC50	growth	96	144
	<i>lactuca sativa</i>	OECD	7.5	1.4	12		14d	EC50	growth	79	119
	<i>lactuca sativa</i>	OECD	7.5	1.8	24		7d	EC50	growth	146	219
	<i>lactuca sativa</i>	OECD	7.5	1.8	24		14d	EC50	growth	168	252
	Oligochaeta										
	<i>Eisenia fetida</i>	art. soil	6	10	20	20	14d	LC50	mortality	401	120
	<i>Allobophora tuberculata</i>	art. soil	6	10	20	20	14d	LC50	mortality	450	135
	<i>Eudrilus eugeniae</i>	art. soil	6	10	20	20	14d	LC50	mortality	188	56
	<i>Perionyx excavatus</i>	art. soil	6	10	20	20	14d	LC50	mortality	258	77
Chronic toxicity to organisms											
	Macrophyta										
	<i>lactuca sativa</i>	OECD	7.8	1.4	12	20	7d	NOEC	growth	32	48

Table B2: Toxicity data for Toluene (Van de Plassche et al., 1993)

Type	Organisms	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta lactuca sativa	OECD	7.8	1.4	12	20	14d	EC50	growth	> 1000	>1500
Chronic toxicity to organisms											
	Macrophyta lactuca sativa	OECD	7.8	1.4	12	20	7d	NOEC	growth	100	150
	Oligochaeta eisenia foetida	art. soil	6	10	20	-	28d	NOEC	cocoon production	49.6	15

Table B3: Toxicity data for Diethylphtalate (Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.5	1.4	12		7d	EC50	growth	106	159
	Lactuca sativa	brook bed	7.5	1.4	12		14d	EC50	growth	134	201
Chronic toxicity to organisms											
	Macrophyta										
	Spinacia oleracea			2		24	16d	EC25	growth	1	0.5
	Pisum sativum			2		24	16d	EC20	growth	1	0.5
	lactuca sativa	OECD	7.8	1.4	12	20	14d	NOEC	growth	32	48

Table B4: Toxicity data for Dibutylphtalate (Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.5	1.4	12		7d	EC50	growth	387	580
	Lactuca sativa	brook bed	7.5	1.4	12		14d	EC50	growth	> 1000	> 1500
Chronic toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.5	1.4	12		7d	NOEC	growth	32	48

Table B5: Toxicity data for Dimethylphthalate (Denneman & Van Gestel, 1990b)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Macrophyta											
	Spinacia oleracea			2		24	16d	EC64	growth	1	1.5
	Pisum sativum			2		24	16d	EC50	growth	1	1.5
Oligochaeta											
	Eisenia fetida	art. soil	6	10	20	20	14d	LC50	mortality	3160	948
	Allobophora tuberculata	art. soil	6	10	20	20	14d	LC50	mortality	3335	100
	Eudrilus eugeniae	art. soil	6	10	20	20	14d	LC50	mortality	2000	600
	Perionyx excavatus	art. soil	6	10	20	20	14d	LC50	mortality	1064	319

APPENDIX C: TERRESTRIAL TOXICITY DATA FOR POLYCYCLIC AROMATIC HYDROCARBONS

Table C1: Toxicity data for Anthracene (Kalf et al., 1995)

Type	Organisms	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	L(E)C50 stand. soil (mg.kg ww ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Avena sativa	sandy loam	5.5	2	-	23-35	14 d	LC50	mortality	530	795
	Avena sativa	sandy loam	5.5	2	-	23-35	14 d	EC50	growth	30	45
	Cucumis sativus	sandy loam	5.5	2	-	23-35	14 d	EC50	growth	720	1080

Table C2: Toxicity data for Benzo[a]anthracene (Kalf et al., 1995)

Type	Organisms	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Isopoda										
	Oniscus asellus	-	-	> 90	-	20	47 w	NOEC	female fresh weight	7.5	0.7

Table C3: Toxicity data for Benzo[a]pyrene (Kalf et al., 1995)

Type	Organisms	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
Oligochaeta											
	Enchytraeus crypticus	-	-	3.9	-	20-25	30 d	LOEC24	reproduction	10.1	2.6
	Eisenia f. fetida	-	-	3.9	-	20	28 d	LOEC51	survival	10	0.8
	Eisenia f. fetida	-	-	3.9	-	20	28 d	LOEC90	reproduction	10	0.8
Isopoda											
	Oniscus asellus	-	-	>90	-	20	9 w	NOEC	weight and length growth	32	3.2
	Porcellio scaber	-	-	>90	-	20	9 w	NOEC	weight and length growth	32	3.2
	Porcellio scaber	-	-	>90	-	17	9 w	NOEC	length growth	32	3.2

APPENDIX D: TERRESTRIAL TOXICITY DATA FOR HALOGENATED NON-AROMATICS

Table D1: Toxicity data for Tetrachloroethylene (Van de Plassche et al., 1993)

Type	Organisms	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg ww ⁻¹)
Acute toxicity to organisms											
	Oligochaeta Eisenia foetida	OECD	6	10	20	20	14d	LC50	mortality	155	46

APPENDIX E: TERRESTRIAL TOXICITY DATA FOR HALOGENATED AROMATICS

Table E1: Toxicity data for 3-Chloroaniline (Reuther et al., 1998)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Macrophyta											
	Lactuca sativa	loam	7.5	1.4	12	21	7d	EC50	growth	17	26
	Lactuca sativa	loam	7.5	1.4	12	21	7d	EC50	growth	15	23
	Lactuca sativa	loam	7.5	2.0	15	22	7d	EC50	growth	28	42
	Lactuca sativa	loam	7.5	2.0	15	22	14d	EC50	growth	23	35
	Lactuca sativa	OECD	6.2	8.1	8.1	22	7d	EC50	growth	126	47
	Lactuca sativa	OECD	6.2	8.1	8.1	22	14d	EC50	growth	60	22
Oligochaeta											
	Eisenia andrei	sand	4.8	3.7	1.4	23	14d	LC50	mortality	220	178
	Eisenia andrei	artificial	5.9	8.1	8.1	23	14d	LC50	mortality	448	166
	Lumbricus rubellus	sand	4.8	3.7	1.4	23	14d	LC50	mortality	195	158
	Lumbricus rubellus	artificial	5.9	8.1	8.1	23	14d	LC50	mortality	332	123
Toxicity to soil processes											
Microbial processes											
	respiration	sandy loam	7.5	1.5	10	5	18h	LOEC15	inhibition	100	150
	nitrification	loam	7.0	3	-	-	>10d	NOEC	inhibition	5	5

Table E2: Toxicity data for 4-Chloroaniline (Reuther et al., 1998)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Bacteriophyta										
	Pseudomonas putida	loamy sand	6.5	4.8	2.6	25	24h	LOEC15	growth	100	31
Toxicity to soil processes											
	Microbial processes										
	respiration	sandy loam	7.5	1.5	10	5	18h	LOEC15	inhibition	100	75
	O ₂ -consumption	loamy sand	7.3	7.9	-	-	4h	NOEC	inhibition	100	38
	C O ₂ -production	loamy sand	7.3	7.9	-	-	4h	NOEC	inhibition	10	3.8
	ATP content	clay loam	6.4	3.2	33.6	20	48d	NOEC	inhibition	20	19

Table E3: Toxicity data for 3,4-Dichloroaniline (Reuther et al., 1998)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta										
	Eisenia andrei	artificial	7.0	7.7	20	23	14d	LC50	mortality	250	97
	Eisenia andrei	sand	7.0	1.7	4.3	23	14d	LC50	mortality	140	210
	Eisenia andrei	sand	4.1	1.7	4.3	23	14d	LC50	mortality	140	210
Chronic toxicity to organisms											
	Bacteriophyta										
	Pseudomonas putida	loamy sand	6.5	4.8	2.6	25	24h	LOEC52	growth	100	6.2
	Macrophyta										
	Lactuca sativa	OECD	7.8	1.4	12	20	14d	NOEC	growth	1	1.5
Toxicity to soil processes											
	Microbial processes										
	respiration	sandy loam	7.5	1.5	10	5	18h	LOEC15	inhibition	66	50
	C O ₂ -production	loamy sand	7.3	7.9	-	-	4h	NOEC	inhibition	300	114
	nitrification	loam	7.2	3	-	-	>10d	NOEC	inhibition	5	5
	acetate mineralisation	sand	4.4	1.02	0.4	10	2d	NOEC	inhibition	260	390
	acetate mineralisation	sand	4.4	1.02	0.4	10	2d	NOEC	inhibition	48	72

Table E4: Toxicity data for 2,3,7,8-TCDD (Liem, 1993)

Type	Organisms	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg ww ⁻¹)
Chronic toxicity to organisms											
	Oligochaeta										
	Allolobophora caliginosa	sandy loam	6.7	5	-	20	85d	NOLC	mortality	5	3

Table E5: Toxicity data for 2-Chlorophenol (Janus et al., 1991; Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.8	1.4	12	18-26	1w	EC50	growth	52	78
	Lactuca sativa	brook bed	7.8	1.4	12	18-26	2w	EC50	growth	43	65

Table E6: Toxicity data for 2,4-Dichlorophenol (Janus et al., 1991; Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.8	1.4	12	18-26	1w	EC50	growth	27	41
	Lactuca sativa	brook bed	7.8	1.4	12	18-26	2w	EC50	growth	53	80

Table E7: Toxicity data for 2,4,5-Trichlorophenol (Janus et al., 1991; Van Gestel et al., 1996)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Macrophyta											
	Lactuca sativa	loam	7.5	2	15		7d	EC50	growth	22	33
	Lactuca sativa	loam	7.5	2	15		14d	EC50	growth	4.3	6.4
	Lactuca sativa	OECD	6.2	8.1	8.1		7d	EC50	growth	> 150	> 56
	Lactuca sativa	OECD	6.2	8.1	8.1		14d	EC50	growth	160	59
Oligochaeta											
	Eisenia andrei	mod. humic sand	5.2	3.7	1.4	23	14d	LC50	mortality	46	37
	Eisenia andrei	very humic sand	5.6	6.1	2.4	23	14d	LC50	mortality	76	37
	Eisenia andrei	OECD	6	8	8	23	14d	LC50	mortality	63	23
	Eisenia andrei	peaty soil	4	15.6	9	23	14d	LC50	mortality	165	32
	Lumbricus rubellus	mod. humic sand	5.2	3.7	1.4	15	14d	LC50	mortality	235	191
	Lumbricus rubellus	very humic sand	5.6	6.1	2.4	15	14d	LC50	mortality	316	155
	Lumbricus rubellus	OECD	6	8	8	15	14d	LC50	mortality	362	136
	Lumbricus rubellus	peaty soil	4	15.6	9	15	14d	LC50	mortality	875	168

Table E8: Toxicity data for 2,4,6-Trichlorophenol (Janus et al., 1991; Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.8	1.4	12	18-26	7d	EC50	growth	19	29
	Lactuca sativa	brook bed	7.8	1.4	12	18-26	14d	EC50	growth	16	24
	Oligochaeta										
	Allolobophora tuberculata	OECD	6	8	8	20	14d	LC50	mortality	108	41
	Eisenia fetida	OECD	6	8	8	20	14d	LC50	mortality	58	22
	Eudrilus eugeniae	OECD	6	8	8	20	14d	LC50	mortality	85	32
	Perionyx excavatus	OECD	6	8	8	20	14d	LC50	mortality	78	29

Table E9: Toxicity data for Pentachlorophenol (Janus et al., 1991; Hulzebos et al., 1993; Van Gestel et al., 1996)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Macrophyta											
	Avena sativa	agricultural	-	5.7	<8	-	14d	EC50	growth	57	30
	Lactuca sativa	agricultural	-	5.7	<8	-	14d	EC50	growth	4.8	2.5
	Lactuca sativa	brook bed	7.8	1.4	12	18-26	7d	EC50	growth	7	11
	Lactuca sativa	brook bed	7.8	1.4	12	18-26	14d	EC50	growth	8	12
	Lactuca sativa	brook bed	7.8	1.8	12	20	7d	EC50	growth	2.7	4.0
	Lactuca sativa	brook bed	7.8	1.8	12	20	14d	EC50	growth	3.2	4.8
	Lactuca sativa	loam	7.5	2	15	-	7d	EC50	growth	7	11
	Lactuca sativa	loam	7.5	2	15	-	14d	EC50	growth	8	12
	Lactuca sativa	OECD	6.2	8.1	8.1	-	7d	EC50	growth	3.4	1.3
	Lactuca sativa	OECD	6.2	8.1	8.1	-	14d	EC50	growth	3	1.1
Oligochaeta											
	Eisenia andrei	mod. humic sand	5.2	3.7	1.4	23	14d	LC50	mortality	84	68
	Eisenia andrei	very humic sand	5.6	6.1	2.4	23	14d	LC50	mortality	142	70
	Eisenia andrei	OECD	6	8	8	23	14d	LC50	mortality	86	32
	Eisenia andrei	peaty soil	4	15.6	9	23	14d	LC50	mortality	503	97
	Eisenia andrei	OECD	6	8	8	23	14d	LC50	mortality	28	11
	Eisenia andrei	sandy soil	4.1	1.7	4.3	23	14d	LC50	mortality	52	78
	Eisenia andrei	sandy soil	7	1.7	4.3	23	14d	LC50	mortality	16	24
	Eisenia andrei	art. soil	7	10	5	22	28d	LC50	mortality	87	26
	Lumbricus rubellus	mod. humic sand	5.2	3.7	1.4	15	14d	LC50	mortality	1206	978
	Lumbricus rubellus	very humic sand	5.6	6.1	2.4	15	14d	LC50	mortality	1013	498
	Lumbricus rubellus	OECD	6	8	8	15	14d	LC50	mortality	362	136
	Lumbricus rubellus	peaty soil	4	15.6	9	15	14d	LC50	mortality	4627	890
	Eisenia fetida	OECD	6	8	8	-	14d	LC50	mortality	50	19
	Eisenia fetida	OECD	6	8	8	-	28d	LC50	mortality	15	5.6
	Eisenia fetida	OECD	6	8	8	-	28d	LC50	mortality	10	3.7
	Enchytraeus albidus	OECD	6	8	8	12	28d	LC50	mortality	136	51

Table E9: Toxicity data for Pentachlorophenol (Janus et al., 1991) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
Macrophyta											
	Avena sativa	agricultural	-	5.7	<8	-	14d	NOEC	growth	10	5.3
	Lactuca sativa	agricultural	-	5.7	<8	-	14d	NOEC	growth	1	0.5
	Lactuca sativa	brook bed	7.8	1.4	12	20	14d	NOEC	growth	0.32	0.5
Oligochaeta											
	Eisenia fetida	OECD	6	8	8	-	28d	NOLC	mortality	10	5.0
	Eisenia fetida	OECD	6	8	8	-	28d	NOEC	reproduction	9	4.5
	Eisenia fetida	OECD	6	8	8	-	28d	NOEC	reproduction	5.6	2.8
	Eisenia fetida	OECD	6	8	8	-	28d	NOEC	appearance	5	2.5
	Eisenia andrei	OECD	6	8	8	23	14d	NOEC	survival/reproduction	10	5.0
	Eisenia andrei	OECD	6	8	8	23	14d	NOEC	growth/reproduction	20	10
Toxicity to soil processes											
Microbial processes											
	H ₂ -oxidation	sandy loam	7	3	18	25	2h	EC50	inhibition	177	18
	N ₂ -fixation	sandy loam	6.5	10	10	20	2w	EC50	inhibition	50	1.5
	Bio-activity	clay loam	5.9	21	31	16-22	18w	NOEC	inhibition	≥ 20 (wwt)	≥ 3.2
	Bio-activity	silt loam	6.9	2	25	16-22	18w	NOEC	inhibition	≥ 20 (wwt)	≥ 34
	Bio-activity	sandy loam	6.5	2	7	16-22	18w	NOEC	inhibition	2 (wwt)	3.4
	ATP-content	agricultural	6.4	3	34	20	7w	NOEC	inhibition	2	2.0
	Nitrification	sand	5.2	6	5	-	4w	NOEC	inhibition	11	5.5
	Nitrification	loam	5.2	3	18	-	4w	NOEC	inhibition	12	12
	Respiration	sand	5.2	6	5	-	5h	NOEC	inhibition	≥ 1370	≥ 685
	Respiration	loam	5.2	3	18	-	5h	NOEC	inhibition	125	125
	Mineralisation of acetate	subsoil sands	6-7	<0.2	-	10	≤ 2w	NOEC	inhibition	0.18-180	0.27-270
	Mineralisation of acetate	surface sand	6-7	<0.2	-	10	≤ 2w	NOEC	inhibition	15	23

wwt = wet weight

Table E10: Toxicity data for Monochlorobenzene (Van Gestel et al., 1991; Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.5	1.4	12		7d	EC50	growth	1000	1500
	Lactuca sativa	brook bed	7.5	1.4	12		14d	EC50	growth	> 1000	> 1500
	Oligochaeta										
	Eisenia andrei	KOGB	4.8	3.7	1.4		14d	LC50	mortality	240	195
	Eisenia andrei	OECD	5.9	8.1	8.1		14d	LC50	mortality	446	165
	Lumbricus rubellus	KOGB	4.8	3.7	1.4		14d	LC50	mortality	547	443
	Lumbricus rubellus	OECD	5.9	8.1	8.1		14d	LC50	mortality	1107	410

Table E11: Toxicity data for 1,4-Dichlorobenzene (Hesse et al., 1991; Van Gestel et al., 1991; Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.8	1.4	12	20	7d	EC50	growth	213	319
	Lactuca sativa	brook bed	7.8	1.4	12	20	14d	EC50	growth	248	372
	Oligochaeta										
	Dendroboena rubida	peat	7	10				LC50	mortality	390	117
	Lumbricus terrestris	peat	7	10				LC50	mortality	390	117
	Eisenia andrei	KOGB	4.8	3.7	1.4		14d	LC50	mortality	128	104
	Eisenia andrei	OECD	5.9	8.1	8.1		14d	LC50	mortality	229	85
	Lumbricus rubellus	KOGB	4.8	3.7	1.4		14d	LC50	mortality	184	149
	Lumbricus rubellus	OECD	5.9	8.1	8.1		14d	LC50	mortality	615	228
Chronic toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.8	1.4	12	20	14d	NOEC	growth	10	15

Table E12: Toxicity data for 1,2,3-Trichlorobenzene (Hesse et al., 1991; Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.5	1.4	12		7d	EC50	growth	5.8	8.7
	Lactuca sativa	brook bed	7.5	1.4	12		14d	EC50	growth	3.8	5.7
	Lactuca sativa	brook bed	7.5	1.8	24		7d	EC50	growth	1-3.2	1.5-4.8
	Lactuca sativa	brook bed	7.5	1.8	24		14d	EC50	growth	1	1.5
	Oligochaeta										
	Eisenia andrei	mod. humic sand	4.8	3.7	1.4	19	14d	LC50	mortality	134	109
	Eisenia andrei	very humic sand	5.3	6.1	2.4	19	14d	LC50	mortality	240	118
	Eisenia andrei	OECD	3.8	16	9	19	14d	LC50	mortality	133	25
	Eisenia andrei	peaty soil	6.5	8.1	8.1	19	14d	LC50	mortality	547	203
	Lumbricus rubellus	mod. humic sand	4.8	3.7	1.4	19	14d	LC50	mortality	115	93
	Lumbricus rubellus	very humic sand	5.3	6.1	2.4	19	14d	LC50	mortality	207	102
	Lumbricus rubellus	OECD	3.8	16	9	19	14d	LC50	mortality	195	37
	Lumbricus rubellus	peaty soil	6.5	8.1	8.1	19	14d	LC50	mortality	563	209
Chronic toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.8	1.4	12	20	14d	NOEC	growth	1	1.5

Table E13: Toxicity data for 1,2,4-Trichlorobenzene (Hesse et al., 1991; Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.5	1.4	12	20	7d	EC50	growth	56	84
	Lactuca sativa	brook bed	7.5	1.4	12	20	14d	EC50	growth	48	72
	Oligochaeta										
	Alloobophora tuberculata	OECD	6	10	20	20	14d	LC50	mortality	197	59
	Eisenia fetida	OECD	6	10	20	20	14d	LC50	mortality	251	75
	Eudrilus eugeniae	OECD	6	10	20	20	14d	LC50	mortality	127	38
	Perionyx excavatus	OECD	6	10	20	20	14d	LC50	mortality	180	54
Chronic toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.8	1.4	12	20	14d	NOEC	growth	10	15

Table E14: Toxicity data for 1,3,5-Trichlorobenzene (Hesse et al., 1991; Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.5	1.4	12		7d	EC50	growth	115	173
	Lactuca sativa	brook bed	7.5	1.4	12		14d	EC50	growth	123	185
Chronic toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.8	1.4	12	20	7d	NOEC	growth	10	15

Table E15: Toxicity data for 1,2,3,4-Tetrachlorobenzene (Hesse et al., 1991; Van Gestel et al., 1991; Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.5	1.4	12		7d	EC50	growth	67	101
	Lactuca sativa	brook bed	7.5	1.4	12		14d	EC50	growth	32	48
	Oligochaeta										
	Eisenia andrei	KOGB	4.8	3.7	1.4		14d	LC50	mortality	75	61
	Eisenia andrei	OECD	5.9	8.1	8.1		14d	LC50	mortality	223	83
	Lumbricus rubellus	KOGB	4.8	3.7	1.4		14d	LC50	mortality	112	91
	Lumbricus rubellus	OECD	5.9	8.1	8.1		14d	LC50	mortality	201	74
Chronic toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.8	1.4	12	20	14d	NOEC	growth	10	15

Table E16: Toxicity data for 1,2,3,5-Tetrachlorobenzene (Hesse et al., 1991; Van Gestel et al., 1991; Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.5	1.4	12	20	7d	EC50	growth	4.2	6.3
	Lactuca sativa	brook bed	7.5	1.4	12	20	14d	EC50	growth	1.3	1.9

Table E17: Toxicity data for 1,2,4,5-Tertachlorobenzene (Hesse et al., 1991; Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50 stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.5	1.8	24		7d	EC50	growth	2	3.0
	Lactuca sativa	brook bed	7.5	1.8	24		14d	EC50	growth	2	3.0

Table E18: Toxicity data for pentachlorobenzene (Hesse et al., 1991; Van Gestel et al., 1991; Hulzebos et al., 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.5	1.4	12		7d	EC50	growth	228	342
	Lactuca sativa	brook bed	7.5	1.4	12		14d	EC50	growth	56	84
	Lactuca sativa	brook bed	7.5	1.8	24		7d	EC50	growth	862	1293
	Lactuca sativa	brook bed	7.5	1.8	24		14d	EC50	growth	320	480
	Oligochaeta										
	Eisenia andrei	KOGB	4.8	3.7	1.4		14d	LC50	mortality	134	109
	Eisenia andrei	OECD	5.9	8.1	8.1		14d	LC50	mortality	238	88
	Lumbricus rubellus	KOGB	4.8	3.7	1.4		14d	LC50	mortality	115	93
	Lumbricus rubellus	OECD	5.9	8.1	8.1		14d	LC50	mortality	201	74
Chronic toxicity to organisms											
	Macrophyta										
	Lactuca sativa	brook bed	7.8	1.4	12	20	14d	NOEC	growth	10	15

Table E19: Toxicity data for Hexachlorobenzene (Hesse et al., 1991)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Macrophyta Lactuca sativa	brook bed	7.8	1.4	12	20	14d	NOEC	growth	100	150

APPENDIX F: TERRESTRIAL TOXICITY DATA FOR METALS

Table F1: Toxicity data for Arsenic (Crommentuijn et al., 1997a)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
Macrophyta											
	Glycine max	clay	-	3.2	35	-	6w	NOEC	growth	75	58
	Gossypium hirsutum	clay	-	3.2	35	-	6w	NOEC	growth	149	114
	Gossypium hirsutum	sandy loam	-	3	18	-	6w	NOEC	growth	18	18
Oligochaeta											
	Eisenia fetida, 5 weeks	peat	7.5	42.8	1	19-22	8w	NOEC	mortality/immobility	50	36

Table F1: Toxicity data for Arsenic (Crommentuijn et al., 1997a) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	N-mineralization	-	5.8	4.4	23	37	1.5h	NOEC	inhibition	375	336
	N-mineralization	-	5.8	4.4	23	37	1.5h	NOEC	inhibition	375	336
	N-mineralization	-	6.6	5.0	45	37	1.5h	NOEC	inhibition	375	249
	N-mineralization	-	6.6	5.0	45	37	1.5h	NOEC	inhibition	375	249
	N-mineralization	-	7.8	6.4	30	37	1.5h	NOEC	inhibition	375	295
	N-mineralization	-	7.8	6.4	30	37	1.5h	NOEC	inhibition	375	295
	N-mineralization	-	7.4	9.3	34	37	1.5h	NOEC	inhibition	375	270
	N-mineralization	-	7.4	9.3	34	37	1.5h	NOEC	inhibition	375	270
	Phosphatase (acid)	Webster	5.8	4.4	23	37	1.5h	NOEC	inhibition	190	170
	Phosphatase (acid)	Webster	5.8	4.4	23	37	1.5h	EC33	inhibition	190	57
	Phosphatase (acid)	Harps	7.8	6.4	30	37	1.5h	NOEC	inhibition	1900	1495
	Phosphatase (acid)	Harps	7.8	6.4	30	37	1.5h	EC39	inhibition	1900	498
	Phosphatase (acid)	Okoboij	7.4	9.3	34	37	1.5h	EC16	inhibition	1900	684
	Phosphatase (acid)	Okoboij	7.4	9.3	34	37	1.5h	EC62	inhibition	1900	137
	Phosphatase (alkaline)	Harps	7.8	6.4	30	37	1.5h	EC35	inhibition	1900	498
	Phosphatase (alkaline)	Harps	7.8	6.4	30	37	1.5h	EC75	inhibition	1900	149
	Phosphatase (alkaline)	Okoboij	7.4	9.3	34	37	1.5h	NOEC	inhibition	190	137
	Phosphatase (alkaline)	Okoboij	7.4	9.3	34	37	1.5h	EC32	inhibition	190	46
	Phosphatase	spar-mor	4.3	9.3	<1	22	3h	EC20	inhibition	749	215
	Phosphatase	spar-mor	4.3	9.3	<1	22	3h	EC23	inhibition	1498	430
	Phosphatase	mull	6.3	13	29	22	3h	NOEC	inhibition	749	548
	Phosphatase	mull	6.3	13	29	22	3h	NOEC	inhibition	1498	1095
	Urease	Weller	5.1	2.6	17	37	2h	EC98	inhibition	375	38
	Urease	Nicollet	6.1	5.6	30	37	2h	NOEC	inhibition	375	298
	Urease	Webster	5.8	4.4	23	37	2h	EC27	inhibition	375	112
	Urease	Harps	7.8	6.4	30	37	2h	NOEC	inhibition	38	30
	Urease	Luton	6.8	7.4	42	37	2h	EC44	inhibition	375	84
	Urease	Okoboij	7.4	9.3	34	37	2h	EC14	inhibition	38	14
	Nitrification	Webster	5.8	4.4	23	37	1.5h	EC98	inhibition	375	34
	Nitrification	Webster	5.8	4.4	23	37	1.5h	EC71	inhibition	375	34
	Nitrification	Harps	7.8	6.4	30	37	1.5h	EC88	inhibition	375	30
	Nitrification	Harps	7.8	6.4	30	37	1.5h	EC27	inhibition	375	98
	Nitrification	Okoboij	7.4	9.3	34	37	1.5h	EC64	inhibition	375	27
	Nitrification	Okoboij	7.4	9.3	34	37	1.5h	EC14	inhibition	375	135

Table F2: Toxicity data for Barium (Van de Plassche et al., 1992)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Phosphatase (acid)	clay loam	7.8	6.4	30	37	1h	EC3	inhibition	3400	2583
	Phosphatase (acid)	silty clay	7.4	9.3	34	37	1h	EC8	inhibition	3400	2325
	Phosphatase (acid)	loam	5.8	4.4	23	37	1h	EC8	inhibition	3400	3206
	Phosphatase (acid)	loam	5.8	4.4	23	37	1h	EC6	inhibition	340	321
	Arylsulphatase		6.2	4.6	29	37	1h	EC24	inhibition	3400	886
	Arylsulphatase		7.6	5.5	30	37	1h	EC20	inhibition	3400	861
	Arylsulphatase		7.6	5.5	30	37	1h	EC13	inhibition	350	133
	Arylsulphatase		6.5	5	26	37	1h	EC14	inhibition	3400	1453
	Arylsulphatase		6.5	5	26	22	1h	EC8	inhibition	350	299
	Arylsulphatase		7	9	34	22	1h	EC13	inhibition	3400	1162
	Phosphatase (alkaline)	clay loam	7.8	6.4	30	37	1h	EC17	inhibition	3400	1291
	Phosphatase (alkaline)	silty clay	7.4	9.3	34	37	1h	EC5	inhibition	3400	2325
	Phosphatase (alkaline)	loam	7.4	9.3	34	37	1h	EC3	inhibition	340	232
	Urease		5.1	2.6	17	37	2h	EC2	inhibition	690	820
	Urease		6.1	5.6	30	37	2h	EC2	inhibition	690	524
	Urease		5.8	4.4	23	37	2h	EC12	inhibition	690	325
	Urease		7.8	6.4	30	37	2h	EC7	inhibition	690	524
	Urease		7.8	6.4	30	37	2h	EC0	inhibition	69	52
	Urease		6.8	7.4	42	37	2h	EC3	inhibition	690	393
	Urease		7.4	9.3	34	37	2h	EC7	inhibition	690	472
	Urease		7.4	9.3	34	37	2h	EC0	inhibition	69	47

Table F3: Toxicity data for Berrylium (Van de Plassche et al., 1992)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Respiration	silt loam	6.7	3.1	27	20	9d	EC11	inhibition	0.5	0.21
	Respiration	silt loam	6.7	3.1	27	20	9d	EC49	inhibition	450	125
	Respiration	clay	7	5.5	51	20	9d	EC6	inhibition	0.5	0.25
	Respiration	clay	7	5.5	51	20	9d	EC25	inhibition	450	75
	Respiration	silt loam	7.2	1.7	21	20	9d	EC18	inhibition	5.9	3.0
	Respiration	silt loam	7.2	1.7	21	20	9d	EC43	inhibition	450	150
	Respiration	sandy loam	8.2	4.7	11	20	9d	EC3	inhibition	0.5	0.75
	Respiration	sandy loam	8.2	4.7	11	20	9d	EC29	inhibition	450	225
	N-mineralization	sandy cambisol	6	2	9		8-9y	EC43	inhibition	30	17
	N-mineralization	sandy cambisol	6	2	9		8-9y	EC48	inhibition	80	44
	Nitrification	sandy cambisol	6	2	9		8-9y	EC2	inhibition	30	50
	Nitrification	sandy cambisol	6	2	9		8-9y	EC8	inhibition	80	133

Table F4: Toxicity data for Cadmium (Crommentuijn et al., 1997a)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
Macrophyta											
	Grain species	marine loam	5.6	1.6	7.8	-	5m	NOEC	growth	12.5	15
	Grain species	marine loam	5.4	2.4	26	-	5m	NOEC	growth	6.25	5.6
	Grain species	loam	5.2	3.2	37.7	-	5m	NOEC	growth	50	39
	Grain species	sand	5.0	3.4	2.6	-	5m	NOEC	growth	6.25	7.3
	Grain species	sand	5.4	6.8	3.3	-	5m	NOEC	growth	50	50
	Grain species	sand	4.6	19.4	2.6	-	5m	NOEC	growth	6.25	4.3
	Raphanus sativa	loamy sand	5.4	3	18	25	6w	NOEC	growth	10.7	10
	Spinacia oleracea	sand	5.8	2.2	5	-	-	EC10	growth	0.9	1.1
	Spinacia oleracea	sand	5.4	5.1	5	-	-	EC10	growth	1.5	1.6
	Spinacia oleracea	sandy loam	5.8	1.7	18	-	-	EC10	growth	0.8	0.8
	Spinacia oleracea	sandy loam	7.1	2.1	18	-	-	EC10	growth	1.8	1.8
	Spinacia oleracea	clay	5.8	3	50	-	-	EC10	growth	2.4	1.7
	Spinacia oleracea	clay	7.2	2.8	50	-	-	EC10	growth	3.5	2.5
Mollusca											
	Helix aspersa	food	-	86	0	-	30d	NOEC	reproductive behaviour	10	2.6
Oligochaeta											
	Dendrobaena rubida	-	6.5	9.7	5	14	3m	NOEC	cocoon production	101	90
	Eisenia andrei	art. soil	6.0	10	20	20	3w	EC11-19	cocoon production	10	3.8
	Eisenia andrei	art. soil	6.0	10	20	20	3w	NOEC	number young	10	7.6
	Eisenia andrei, juvenile	art. soil	6.7	10	20	23	12w	NOEC	growth	32	24
	Eisenia andrei, juvenile	art. soil	6.5	10	20	23	12w	NOEC	growth	18	14
	Eisenia fetida	soil + manure	-	50	5	-	8w	NOEC	cocoon production	25	10
	Eisenia fetida	soil + manure	-	50	5	-	8w	NOEC	growth	50	19
	Eisenia fetida, adult	art. soil	6.3	10	20	20	8w	NOEC	cocoon production	39.2	30
	Lumbricus rubellus	sandy clay	7.3	3.4	17	-	12w	NOEC	cocoon production	10	10
	Lumbricus terrestris	art. soil	-	8	10	10	14d	NOEC	sperm production	200	179
Insecta											
	Folsomia candida, adult	art. soil	6	10	20	20	7w	NOEC	mortality/immobility	325	247
	Folsomia candida, adult	art. soil	6	10	20	20	26d	NOEC	growth	147	112
	Folsomia candida, adult	art. soil	6	10	20	20	26d	NOEC	number of young	34	26
	Folsomia candida	art. soil	5.25	8	10	-	6w	NOEC	cocoon production / young	71	63
	Orchessalla sincta	food	-	30	0	20	9w	NOEC	growth	3.7	2.0
	Orchessalla sincta	food	-	30	0	20	9w	NOEC	mortality/number of young	55	30

Table F4: Toxicity data for Cadmium (Crommentuijn et al., 1997a) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Isopoda										
	Porcellio scaber	leaf + litter	6.8	30	0	-	8w	NOEC	growth	6	3.3
	Porcellio scaber	food		30	0	20	10w	NOEC	growth	2.25	1.3
	Porcellio scaber	food	-	30	0	20	10w	NOEC	number young/emergence	10	5.5
	Acari										
	Platynothrus peltifer	food	-	30	0	20	12w	NOEC	number of young	1.6	0.89
	Platynothrus peltifer	food	-	30	0	20	12w	NOEC	mortality/immobility	115	64
Toxicity to soil processes											
	Arginine ammonification	gley	5.5	3.6	5	26	9w	EC82	inhibition	200	22
	Arginine ammonification	cambisol	5.7	2.2	4	26	9w	EC37	inhibition	200	80
	ATP content	cambisol	6.6	1.2	9	15	9w	NOEC	inhibition	50	58
	Cellulose respiration	gley	5.8	0.8	2.2	28	8w	NOEC	inhibition	112	148
	Fe(III)-reduction	gleysol	5.1	3.8	4	-	5d	NOEC	inhibition	40	45
	Glucose respiration	gley	5.8	0.8	2.2	28	14d	NOEC	inhibition	112	148
	Nitrification	-	5.8	4.4	23	30	14d	EC94	inhibition	562	49
	Nitrification	-	7.8	6.4	30	30	14d	EC70	inhibition	562	43
	Nitrification	-	7.4	9.3	34	30	14d	EC74	inhibition	562	38
	Nitrification	cambisol	6.6	1.2	9	15	9w	EC11	inhibition	50	29
	N-mineralization	-	5.8	4.4	23	30	20d	EC17	inhibition	562	245
	N-mineralization	-	6.6	5.0	45	30	20d	EC27	inhibition	562	130
	N-mineralization	-	7.8	6.4	30	30	20d	EC39	inhibition	562	144
	N-mineralization	-	7.4	9.3	34	30	20d	EC18	inhibition	562	128
	N-mineralization	river sand	8.5	0.12	0.2	28	8w	NOEC	inhibition	337	476
	N-mineralization	gley soil	5.8	0.22	2.2	28	8w	NOEC	inhibition	1124	1526
	N-mineralization	gray lowland soil	6.2	0.87	19	28	8w	NOEC	inhibition	337	349
	N-mineralization	light colored soil	6.4	5.4	27.6	28	8w	NOEC	inhibition	337	272
	N-mineralization	humic andasol	5.7	12.2	28.7	28	8w	NOEC	inhibition	337	224
	Arylsulphatase	sand	7.7	1.6	2	20	6w	EC10	inhibition	819	1043
	Arylsulphatase	sand	7.7	1.6	2	20	18m	EC10	inhibition	3.4	4.3
	Arylsulphatase	sandy loam	5.1	5.7	9	20	18m	EC10	inhibition	3.4	3.3
	Arylsulphatase	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	143	140
	Arylsulphatase	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	6.7	6.5
	Arylsulphatase	clay	6.8	3.2	60	20	6w	EC10	inhibition	4440	2854
	Arylsulphatase	clay	6.8	3.2	60	20	18m	EC10	inhibition	28	28
	Arylsulphatase	sandy peat	4.3	12.8	5	20	6w	EC10	inhibition	2660	2155
	Phosphatase (acid)	Webster	5.8	4.4	23	37	1.5h	EC14	inhibition	280	122
	Phosphatase (acid)	Harps	7.8	6.4	30	37	1.5h	EC51	inhibition	2800	214
	Phosphatase (acid)	Okoboji	7.4	9.3	34	37	1.5h	EC48	inhibition	2800	639

Table F4: Toxicity data for Cadmium (Crommentuijn et al., 1997a) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Respiration	sandy loam	5.1	5.7	9	20	28d	EC10	inhibition	30	29
	Respiration	sandy loam	5.1	5.7	9	20	10m	NOEC	inhibition	150	147
	Respiration	sand	7.7	1.6	2	20	10m	EC10	inhibition	13	17
	Respiration	sand	7.7	1.6	2	20	16m	EC9	inhibition	150	191
	Respiration	silty loam	7.4	2.4	19	20	10m	EC10	inhibition	27	26
	Respiration	silty loam	7.4	2.4	19	20	21m	NOEC	inhibition	150	147
	Respiration	sandy peat	4.3	12.8	5	20	10m	EC10	inhibition	52	42
	Respiration	sandy peat	4.3	12.8	5	20	19m	NOEC	inhibition	400	324
	Respiration	clay	6.8	3.2	60	20	19m	NOEC	inhibition	150	96
	Respiration	sandy loam	4.9	2.1	5	30	8w	EC11	inhibition	100	60
	Respiration	river sand	8.5	0.12	0.2	28	8w	NOEC	inhibition	33.7	48
	Respiration	gley soil	5.8	0.22	2.2	28	8w	NOEC	inhibition	33.7	46
	Respiration	gray lowland soil	6.2	0.87	19	28	8w	NOEC	inhibition	112	116
	Respiration	light colored soil	6.4	5.4	27.6	28	8w	NOEC	inhibition	112	90
	Respiration	humic andasol	5.7	12.2	28.7	28	8w	NOEC	inhibition	337	224
	Dehydrogenase	sandy luvisol	6	1.5	7	20	9w	EC38	inhibition	100	40
	Dehydrogenase	cambisol	6.6	1.2	9	15	9w	EC33	inhibition	50	19
	Dehydrogenase	gley-podsol	5.4	1.8	5	26	9w	EC13	inhibition	200	121
	Dehydrogenase	gley	5.5	3.6	5	26	9w	EC54	inhibition	200	22
	Dehydrogenase	cambisol	5.8	1	8	26	9w	EC28	inhibition	200	80
	Dehydrogenase	cambisol	5.9	4.3	12	26	9w	EC30	inhibition	200	66
	Dehydrogenase	cambisol	7.9	2	13	26	9w	EC26	inhibition	200	71
	Dehydrogenase	cambisol	7.0	7.6	29	26	9w	EC24	inhibition	200	50
	Dehydrogenase	cambisol	5.7	2.2	4	26	9w	EC71	inhibition	200	24
	Dehydrogenase	pelosol	8.5	2.1	30	26	9w	EC63	inhibition	200	17
	Dehydrogenase	paracambisol	7.5	1.4	16	26	9w	EC57	inhibition	200	21
	Dehydrogenase	paracambisol	7	4	23	26	9w	EC19	inhibition	200	88
	Dehydrogenase	rendzima	8	2.4	28	26	9w	EC26	inhibition	200	59
	Dehydrogenase	rendzima	8	5.7	38	26	9w	EC22	inhibition	200	48
	Dehydrogenase	parendzima	8.2	1.2	17	26	9w	EC37	inhibition	200	70
	Dehydrogenase	parendzima	8.2	6.2	16	26	9w	EC36	inhibition	200	59

Table F4: Toxicity data for Cadmium (Crommentuijn et al., 1997a) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Urease	sand	7.7	1.6	2	20	6w	EC10	inhibition	150	191
	Urease	sand	7.7	1.6	2	20	18m	EC10	inhibition	40	51
	Urease	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	360	352
	Urease	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	280	274
	Urease	clay	6.8	3.2	60	20	6w	EC10	inhibition	950	611
	Urease	clay	6.8	3.2	60	20	18m	EC10	inhibition	3.0	2
	Urease	sandy peat	4.3	12.8	5	20	6w	EC10	inhibition	1980	1604
	Urease	Weller	5.1	2.6	17	37	2h	EC67	inhibition	560	56
	Urease	Nicollet	6.1	5.6	30	37	2h	EC51	inhibition	560	44
	Urease	Webster	5.8	4.4	23	37	2h	EC50	inhibition	560	49
	Urease	Harps	7.8	6.4	30	37	2h	EC19	inhibition	56	21
	Urease	Luton	6.8	7.4	42	37	2h	EC58	inhibition	560	38
	Urease	Okoboji	7.4	9.3	34	37	2h	EC13	inhibition	56	19
	Phosphatase (alkaline)	Harps	7.8	6.4	30	37	1.5h	EC78	inhibition	2800	214
	Phosphatase (alkaline)	Okoboji	7.4	9.3	34	37	1.5h	EC27	inhibition	280	64
	Phosphatase	spar-mor	4.3	93	<1	22	3h	EC7	inhibition	1124	622
	Phosphatase	mull	6.3	13	29	22	3h	EC6	inhibition	1124	732
	Phosphatase	sand	7.7	1.6	2	20	6w	EC10	inhibition	9.0	11
	Phosphatase	sand	7.7	1.6	2	20	18m	EC10	inhibition	16	20
	Phosphatase	sandy loam	5.1	5.7	9	20	18m	EC10	inhibition	8070	7898
	Phosphatase	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	1405	1373
	Phosphatase	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	13	13
	Phosphatase	clay	6.8	3.2	60	20	6w	EC10	inhibition	140	90
	Phosphatase	clay	6.8	3.2	60	20	18m	EC10	inhibition	830	533

Table F5: Toxicity data for Chromium III (Crommentuijn et al., 1997a)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
Macrophyta											
	Grain species	marine loam	5.6	1.6	7.8	-	5m	NOEC	growth	631	849
	Grain species	marine loam	5.4	2.4	26	-	5m	NOEC	Growth	200	173
	Grain species	loam	5.2	3.2	37.7	-	5m	NOEC	Growth	200	141
	Grain species	sand	5.0	3.4	2.6	-	5m	NOEC	Growth	400	639
	Grain species	sand	5.4	6.8	3.3	-	5m	NOEC	Growth	200	312
Oligochaeta											
	Eisenia andrei	art. soil	6.7-6.9	10	20	20	3w	NOEC	Number young	34	33
	Eisenia andrei	art. soil	6.7-6.9	10	20	20	3w	NOEC	Growth	280	274
	Eisenia andrei	art. soil	6.7-6.9	10	20	20	3w	NOEC	Cocoon production	280	274

Table F5: Toxicity data for Chromium III (Crommentuijn et al., 1997a) (continue)

Type	Organism/process	Soil type	PH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Arylsulphatase	sand	7.7	1.6	2	20	18m	EC10	inhibition	2.1	3
	Arylsulphatase	sandy loam	5.1	5.7	9	20	6w	EC10	inhibition	46	60
	Arylsulphatase	sandy loam	5.1	5.7	9	20	18m	EC10	inhibition	1.0	1
	Arylsulphatase	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	83	83
	Arylsulphatase	clay	6.8	3.2	60	20	6w	EC10	inhibition	43	22
	Arylsulphatase	clay	6.8	3.2	60	20	18m	EC10	inhibition	276	143
	Arylsulphatase	sandy peat	4.3	12.8	5	20	6w	EC10	inhibition	3338	4908
	Arylsulphatase	sandy peat	4.3	12.8	5	20	18m	EC10	inhibition	2730	4014
	Nitrification	-	7.2	2	17	30	21d	NOEC	inhibition	100	105
	Nitrification	Webster	5.8	4.4	23	37	2h	EC96	inhibition	260	24
	Nitrification	Harps	7.8	6.4	30	37	2h	Ec87	inhibition	260	21
	Nitrification	Okoboji	7.4	9.3	34	37	2h	Ec59	inhibition	260	19
	N-mineralization	-	5.8	4.4	23	30	20d	EC20	inhibition	260	80
	N-mineralization	-	6.6	5	45	30	20d	EC15	inhibition	260	82
	N-mineralization	-	7.8	6.4	30	30	20d	EC13	inhibition	260	104
	N-mineralization	-	7.4	9.3	34	30	20d	EC24	inhibition	260	65
	Phosphatase (acid)	Webster	5.8	4.4	23	37	1.5h	NOEC	inhibition	130	119
	Phosphatase (acid)	Harps	7.8	6.4	30	37	1.5h	EC25	inhibition	1300	348
	Phosphatase (acid)	Okoboji	7.4	9.3	34	37	1.5h	EC27	inhibition	1300	324
	Phosphatase (alkaline)	Okoboji	7.4	9.3	34	37	1.5h	EC14	inhibition	130	49
	Phosphatase (alkaline)	Harps	7.8	6.4	30	37	1.5h	EC27	inhibition	1300	348
	Phosphatase	sand	7.7	1.6	2	20	6w	EC10	inhibition	1092	1784
	Phosphatase	sand	7.7	1.6	2	20	18m	EC10	inhibition	723	1181
	Phosphatase	sandy loam	5.1	5.7	9	20	6w	EC10	inhibition	2782	3609
	Phosphatase	sandy loam	5.1	5.7	9	20	18m	EC10	inhibition	858	1113
	Phosphatase	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	728	730
	Phosphatase	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	280	281
	Phosphatase	clay	6.8	3.2	60	20	6w	EC10	inhibition	52	27
	Phosphatase	clay	6.8	3.2	60	20	18m	EC10	inhibition	2153	1117
	Phosphatase	sandy peat	4.3	12.8	5	20	6w	EC10	inhibition	380	559
	Respiration	sandy loam	5.1	5.7	9	20	8w	EC10	inhibition	5	6
	Respiration	sandy loam	5.1	5.7	9	20	10m	NOEC	inhibition	148	192
	Respiration	sandy loam	5.1	5.7	9	20	10w	EC10	inhibition	7	9
	Respiration	sandy loam	5.1	5.7	9	20	43w	EC10	inhibition	6	8
	Respiration	silty loam	7.4	2.4	19	20	21m	EC10	inhibition	86	86
	Respiration	silty loam	7.4	2.4	19	20	21m	NOEC	inhibition	182	182
	Respiration	sandy peat	4.3	12.8	5	20	19m	EC10	inhibition	71	104
	Respiration	clay	6.8	3.2	60	20	19m	NOEC	inhibition	400	208

Table F5: Toxicity data for Chromium III (Crommentuijn et al., 1997a) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Urease	sand	7.7	1.6	2	20	6w	EC10	inhibition	1880	3071
	Urease	sand	7.7	1.6	2	20	18m	EC10	inhibition	390	637
	Urease	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	2050	2055
	Urease	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	890	892
	Urease	clay	6.8	3.2	60	20	6w	EC10	inhibition	280	145
	Urease	clay	6.8	3.2	60	20	18m	EC10	inhibition	350	182
	Urease	sandy peat	4.3	12.8	5	20	6w	EC10	inhibition	360	529
	Urease	Weller	5.1	2.6	17	37	2h	EC50	inhibition	260	27
	Urease	Nicollet	6.1	5.6	30	37	2h	EC22	inhibition	260	70
	Urease	Webster	5.8	4.4	23	37	2h	EC25	inhibition	260	80
	Urease	Harps	7.8	6.4	30	37	2h	NOEC	inhibition	26	21
	Urease	Luton	6.8	7.4	42	37	2h	EC17	inhibition	260	86
	Urease	Okoboji	7.4	9.3	34	37	2h	EC19	inhibition	26	10

Table F6: Toxicity data for Chromium VI (Crommentuijn et al., 1997a)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Phosphatase	spar-mor	4.3	93	< 1	22	3h	EC8	inhibition	520	917
	Phosphatase	spar-mor	4.3	93	< 1	22	3h	EC10	inhibition	1040	1835
	Phosphatase	mull	6.3	13	29	22	3h	EC2	inhibition	520	425
	Phosphatase	mull	6.3	13	29	22	3h	EC3	inhibition	1040	850

Table F7: Toxicity data for Cobalt (Van de Plassche et al., 1992)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Oligochaeta										
	Eisenia foetida	manure + soil		63	5	25	24w	NOEC	growth	92	215
	Eisenia foetida	manure + soil		63	5	25	24w	NOEC	reproduction	92	215

Table F7: Toxicity data for Cobalt (Van de Plassche et al., 1992) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Respiration	silty loam	6.7	3.1	27	20	9d	EC25	inhibition	3	0.83
	Respiration	silty loam	6.7	3.1	27	20	9d	EC43	inhibition	3000	831
	Respiration	clay	7	5.5	51	20	9d	Ec3	inhibition	3	1.5
	Respiration	clay	7	5.5	51	20	9d	EC46	inhibition	3000	488
	Respiration	silty loam	7.2	1.7	21	20	9d	EC6	inhibition	3	3.0
	Respiration	silty loam	7.2	1.7	21	20	9d	EC43	inhibition	3000	1008
	Respiration	sandy loam	8.2	4.7	11	20	9d	EC6	inhibition	3	4.7
	Respiration	sandy loam	8.2	4.7	11	20	9d	EC46	inhibition	3000	1563
	N-mineralization	-	5.8	4.4	23	30	20d	EC12	inhibition	290	273
	N-mineralization	-	6.6	5	45	30	20d	EC2	inhibition	290	158
	N-mineralization	-	7.8	6.4	30	30	20d	EC7	inhibition	290	221
	N-mineralization	-	7.4	9.3	34	30	20d	EC6	inhibition	290	200
	Nitrification	-	5.8	4.4	23	30	10d	EC79	inhibition	300	28
	Nitrification	-	7.8	6.4	30	30	10d	EC22	inhibition	300	76
	Nitrification	-	7.4	9.3	34	30	10d	EC34	inhibition	300	69
	Phosphatase (acid)	clay loam	7.8	6.4	30	37	1h	EC8	inhibition	1500	1145
	Phosphatase (acid)	silty clay	7.4	9.3	34	37	1h	EC5	inhibition	1500	1034
	Phosphatase (acid)	loam	5.8	4.4	23	37	1h	EC1	inhibition	1500	1411
	Phosphatase (acid)	loam	5.8	4.4	23	37	1h	EC0	inhibition	150	141
	Phosphatase (alkaline)	clay loam	7.8	6.4	30	37	1h	EC16	inhibition	1500	573
	Phosphatase (alkaline)	silty clay	7.4	9.3	34	37	1h	EC6	inhibition	1500	1034
	Phosphatase (alkaline)	loam	5.8	4.4	23	37	1h	EC5	inhibition	150	141
	Arylsulphatase		6.2	4.6	29	37	1h	EC10	inhibition	1500	1177
	Arylsulphatase		7.6	5.5	30	37	1h	Ec14	inhibition	1500	573
	Arylsulphatase		7.6	5.5	30	37	1h	EC11	inhibition	150	57
	Arylsulphatase		7.5	5	26	37	1h	EC10	inhibition	1500	1283
	Arylsulphatase		6.5	5	26	37	1h	EC9	inhibition	150	128
	Arylsulphatase		7	9	34	37	1h	EC8	inhibition	1500	1034
	Urease		5.1	2.6	17	37	2h	EC22	inhibition	300	117
	Urease		6.1	5.6	30	37	2h	EC16	inhibition	300	115
	Urease		5.8	4.4	23	37	2h	EC23	inhibition	300	94
	Urease		7.8	6.4	30	37	2h	EC35	inhibition	300	76
	Urease		7.8	6.4	30	37	2h	EC13	inhibition	30	11
	Urease		6.8	7.4	42	37	2h	EC24	inhibition	300	58
	Urease		7.4	9.3	34	37	2h	EC29	inhibition	300	69
	Urease		7.4	9.3	34	37	2h	EC22	inhibition	30	6.9

Table F6: Toxicity data for Copper (Crommentuijn et al., 1997a)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
Macrophyta											
	Avena sativa, seeds	sandy loam	5.5	2.2	12.4	24	2w	NOEC	emergence	1000	1190
	Cucumis sativus, seeds	sandy loam	5.5	2.2	12.4	24	2w	NOEC	emergence	1000	1190
	Glycine max, seeds	sandy loam	5.5	2.2	12.4	24	2w	NOEC	emergence	1000	1190
	Grain species	marine loam	5.6	1.6	7.8	-	5m	NOEC	growth	200	274
	Grain species	marine loam	5.4	2.4	26	-	5m	NOEC	growth	200	176
	Grain species	loam	5.2	3.2	37.7	-	5m	NOEC	growth	200	143
	Grain species	sand	5.0	3.4	2.6	-	5m	NOEC	growth	200	304
	Grain species	sand	5.4	6.8	3.3	-	5m	NOEC	growth	200	268
Nematoda											
	Caenorhabditis elegans	sandy loam	6.2	1.7	16	20	24h	NOEC	mortality/immobility	210	232
	Caenorhabditis elegans	sandy loam	6.1	3.0	16	20	24h	NOEC	mortality/immobility	210	225
	Caenorhabditis elegans	loam	5.1	3.4	20	20	24h	NOEC	mortality/immobility	890	866
	Caenorhabditis elegans	clay loam	6.2	2.2	39	20	24h	NOEC	mortality/immobility	890	633
	Caenorhabditis elegans	clay loam	6.2	2.2	39	20	24h	NOEC	mortality/immobility	210	149
Oligochaeta											
	Allolobophora caliginosa	sand + 1% grass	-	2	5	-	14d	NOEC	cocoon production	50	74
	Allolobophora caliginosa	sand + 1% grass	-	2	5	-	14d	NOEC	growth	100	147
	Allolobophora caliginosa	sand + 1% grass	-	2	5	-	14d	NOEC	mortality/immobilisation	500	736
	Dendrobaena rubida	sand + dung	6.5	9.7	5	14	13w	NOEC	cocoon production	122	145
	Eisenia andrei, juvenile	art. soil	6.7	10	20	20	12w	NOEC	growth/maturation	56	48
	Eisenia andrei	art. soil	6.3-7.1	10	20	20	3w	NOEC	cocoon production	60	51
	Eisenia fetida	art. soil	6.3	10	20	20	8w	NOEC	mortality/immobilisation	210	180
	Eisenia fetida	art. soil	6.3	10	20	20	8w	NOEC	cocoon production	32	27
	Eisenia fetida	soil + dung	-	50	5	-	8w	NOEC	growth/cocoon production	500	294
	Eisenia fetida	soil + dung	-	50	5	-	6w	NOEC	growth/cocoon production	1000	589
	Lumbricus rubellus	sandy clay	7.3	3.4	17	-	12w	NOEC	cocoon production	30	31
	Lumbricus rubellus	sandy clay	7.3	3.4	17	18	12w	NOEC	cocoon production	13	13
	Lumbricus rubellus	sandy clay	7.3	3.4	17	18	12w	NOEC	growth	373	387
Insecta											
	Onychiurus armatus	food	-	95	0	20	17w	NOEC	growth	2608	2234
Acari											
	Platynothrus peltifer	food	-	95	0	18	10w	NOEC	number young	168	144

Table F6: Toxicity data for Copper (Crommentuijn et al., 1997a) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Ammonification	-	5.8	2.6	23	-	20d	NOEC	inhibition	300	279
	Ethylene production	crownhill	6.07	5.4	59	30	7d	NOEC	inhibition	10	5.3
	Ethylene production	santa lucia	6.31	4.4	48	30	7d	NOEC	inhibition	10	6.1
	Ethylene production	sheephead	6.87	3.9	26	30	7d	NOEC	inhibition	10	8.6
	Ethylene production	tollhouse	6.82	3.6	21	30	7d	NOEC	inhibition	10	9.5
	Ethylene production	fallbrook	6.6	2.8	26	30	7d	NOEC	inhibition	10	8.8
	Ethylene production	cibo	7.42	2.8	54	30	7d	NOEC	inhibition	10	5.8
	Ethylene production	kitchen kreek	7.36	2.6	23	30	7d	NOEC	inhibition	10	9.3
	Ethylene production	altamont	7.45	2	46	30	7d	NOEC	inhibition	10	6.5
	Ethylene production	garey	5.91	1.9	21	30	7d	NOEC	inhibition	10	9.8
	Ethylene production	kimberley	7.61	1.9	26	30	7d	NOEC	inhibition	10	8.9
	Ethylene production	pico	8.55	1.5	26	30	7d	NOEC	inhibition	10	9.0
	Ethylene production	ramona	6.31	1.3	26	30	7d	NOEC	inhibition	10	9.0
	Ethylene production	oildale	7.7	1.2	23	30	7d	NOEC	inhibition	10	9.6
	Ethylene production	hanford	7.15	0.8	18	30	7d	NOEC	inhibition	10	11
	Ethylene production	oceanco	7.03	0.8	16	30	7d	NOEC	inhibition	10	11
	Ethylene production	domino	8.55	0.7	29	30	7d	NOEC	inhibition	10	8.6
	Ethylene production	redding	8.56	0.6	64	30	7d	NOEC	inhibition	10	5.3
	Ethylene production	milham	8.24	0.6	34	30	7d	NOEC	inhibition	10	7.9
	Ethylene production	hesperia	7.22	0.5	18	30	7d	NOEC	inhibition	10	11
	Nitrification	peat	4.4	72	0	25	19w	NOEC	inhibition	500	243
	Nitrification	Webster	5.8	4.4	23	37	10d	EC60	inhibition	318	29
	Nitrification	Harps	7.8	6.4	30	37	10d	EC31	inhibition	318	81
	Nitrification	Okoboji	7.4	9.3	34	37	10d	EC43	inhibition	318	73
	N-mineralization	-	6.6	5	45	30	20d	NOEC	inhibition	318	200
	N-mineralization	-	7.8	6.4	30	30	20d	EC7	inhibition	318	244
	Respiration	silty loam	7.4	2.4	19	20	21m	NOEC	inhibition	400	406
	Respiration	sandy loam	4.9	3.6	5.2	30	8w	NOEC	inhibition	12.1	17
	Respiration	sandy loam	5.1	5.7	9	20	8w	EC10	inhibition	4.0	4.7
	Respiration	sandy loam	5.1	5.7	9	20	10m	NOEC	inhibition	6.5	7.7
	Respiration	sandy peat	4.3	12.8	5	20	10m	EC10	inhibition	77	85
	Respiration	sandy peat	4.3	12.8	5	20	19m	NOEC	inhibition	400	440
	Respiration	sand	7.7	1.6	2	20	16m	NOEC	inhibition	150	247
	Respiration	sand	7.7	1.6	2	20	10m	EC10	inhibition	22	36
	Phosphatase (acid)	Webster	5.8	4.4	23	37	1.5h	EC18	inhibition	159	72
	Phosphatase (acid)	Webster	5.8	4.4	23	37	1.5h	EC11	inhibition	159	72
	Phosphatase (acid)	Harps	7.8	6.4	30	37	1.5h	EC28	inhibition	1590	407
	Phosphatase (acid)	Harps	7.8	6.4	30	37	1.5h	EC26	inhibition	1590	407
	Phosphatase (acid)	Okoboji	7.4	9.3	34	37	1.5h	EC43	inhibition	1590	366
	Phosphatase (acid)	Okoboji	7.4	9.3	34	37	1.5h	EC36	inhibition	1590	366

Table F6: Toxicity data for Copper (Crommentuijn et al., 1997a) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. Time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Phosphatase (alkaline)	Harps	7.8	6.4	30	37	1.5h	EC30	inhibition	1590	407
	Phosphatase (alkaline)	Harps	7.8	6.4	30	37	1.5h	EC20	inhibition	1590	407
	Phosphatase (alkaline)	Okoboji	7.4	9.3	34	37	1.5h	NOEC	inhibition	159	110
	Phosphatase (alkaline)	Okoboji	7.4	9.3	34	37	1.5h	NOEC	inhibition	159	110
	Phosphatase	sand	7.7	1.6	2	20	6w	EC10	inhibition	3.2	5.3
	Phosphatase	sand	7.7	1.6	2	20	8m	EC10	inhibition	8.3	14
	Phosphatase	sandy loam	5.1	5.7	9	20	8m	EC10	inhibition	438	520
	Phosphatase	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	1840	1868
	Phosphatase	silty loam	7.4	2.4	19	20	8m	EC10	inhibition	170	173
	Phosphatase	clay	6.8	3.2	60	20	6w	EC10	inhibition	290	155
	Phosphatase	clay	6.8	3.2	60	20	8m	EC10	inhibition	960	513
	Phosphatase	sandy peat	4.3	12.8	5	20	6w	EC10	inhibition	99	109
	Phosphatase	sandy peat	4.3	12.8	5	20	8m	EC10	inhibition	58	64
	Arylsulphatase	sand	7.7	1.6	2	20	6w	EC10	inhibition	330	544
	Arylsulphatase	sand	7.7	1.6	2	20	18m	EC10	inhibition	6.4	11
	Arylsulphatase	sandy loam	5.1	5.7	9	20	6w	EC10	inhibition	813	965
	Arylsulphatase	sandy loam	5.1	5.7	9	20	18m	EC10	inhibition	347	412
	Arylsulphatase	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	100	102
	Arylsulphatase	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	286	290
	Arylsulphatase	clay	6.8	3.2	60	20	6w	EC10	inhibition	619	331
	Arylsulphatase	clay	6.8	3.2	60	20	18m	EC10	inhibition	2667	1425
	Arylsulphatase	sandy peat	4.3	12.8	5	20	6w	EC10	inhibition	8570	9433
	Arylsulphatase	sandy peat	4.3	12.8	5	20	18m	EC10	inhibition	3321	3655

Table F6: Toxicity data for Copper (Crommentuijn et al., 1997a) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
Urease		sand	7.7	1.6	2	20	6w	EC10	inhibition	80	132
Urease		sand	7.7	1.6	2	20	18m	EC10	inhibition	20	33
Urease		sandy loam	5.1	5.7	9	20	6w	EC10	inhibition	120	142
Urease		silty loam	7.4	2.4	19	20	18m	EC10	inhibition	340	345
Urease		clay	6.8	3.2	60	20	6w	EC10	inhibition	440	235
Urease		clay	6.8	3.2	60	20	18m	EC10	inhibition	520	278
Urease		sandy peat	4.3	12.8	5	20	6w	EC10	inhibition	60	66
Urease		sandy peat	4.3	12.8	5	20	18m	EC10	inhibition	210	231
Urease		silty clay loam	6.5	3.7	31	37	5h	EC16	inhibition	50	20
Urease		silty clay loam	6.5	3.7	31	37	5h	EC14	inhibition	50	20
Urease		clay loam	7.3	2	31	37	5h	EC13	inhibition	50	20
Urease		clay loam	7.3	2	31	37	5h	EC15	inhibition	50	20
Urease		Weller	5.1	2.6	17	37	2h	EC72	inhibition	320	34
Urease		Weller	5.1	2.6	17	37	2h	EC21	inhibition	320	113
Urease		Nicollet	6.1	5.6	30	37	2h	EC58	inhibition	320	25
Urease		Nicollet	6.1	5.6	30	37	2h	EC30	inhibition	320	83
Urease		Webster	5.8	4.4	23	37	2h	EC69	inhibition	320	29
Urease		Webster	5.8	4.4	23	37	2h	EC60	inhibition	320	29
Urease		Harps	7.8	6.4	30	37	2h	EC24	inhibition	32	8
Urease		Harps	7.8	6.4	30	37	2h	EC21	inhibition	32	8
Urease		Luton	6.8	7.4	42	37	2h	EC59	inhibition	320	20
Urease		Luton	6.8	7.4	42	37	2h	EC53	inhibition	320	20
Urease		Okoboji	7.4	9.3	34	37	2h	EC17	inhibition	32	11
Urease		Okoboji	7.4	9.3	34	37	2h	EC14	inhibition	32	11

Table F7: Toxicity data for Lead (Janus et al., 1999)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
Macrophyta											
	Avena sativa	loam	5.6	1.6	12	-	170d	NOEC	yield	> 830	> 903
	Avena sativa	loam	5.4	2.4	40	-	170d	NOEC	yield	> 826	> 618
	Avena sativa	loam	5.2	3.2	58	-	170d	NOEC	yield	> 851	> 529
	Avena sativa	sand	5	3.4	4	-	170d	NOEC	yield	> 816	> 983
	Avena sativa	sand	5.4	6.8	5	-	170d	NOEC	yield	> 819	> 917
	Avena sativa	sand	4.6	19.4	4	-	170d	NOEC	yield	> 843	> 794
	Avena sativa	loamy sand	-	3	18	-	42d	NOEC	growth	150	146
	Lolium perenne	sandy loam	7.2	4.4	5	-	6-8w	NOEC	yield	> 1062	> 1237
	Plantago lanceolata	sandy loam	7.2	4.4	5	-	6-8w	NOEC	yield	> 1062	> 1237
	Raphanus sativa	loamy sand	5.4	3	18	-	42d	NOEC	growth	150	146
	Trifolium repens	sandy loam	7.2	4.4	5	-	6-8w	NOEC	yield	> 1062	> 1237
	Triticum aestivum	loamy sand	-	3	18	-	42d	NOEC	growth	137	133
Oligochaeta											
	Dendrobaena rubida	sand + dung	6.5	9.7	5	-	3m	NOEC	reproduction	736	787
	Dendrobaena rubida	sand + dung	5.5	9.7	5	-	3m	NOEC	reproduction	741	792
	Dendrobaena rubida	sand + dung	4.5	9.7	5	-	3m	NOEC	reproduction	170	182
	Eisenia foetida	soil + dung	-	50*	5*	-	8w	NOEC	reproduction	2000	1317
	Eisenia foetida	soil + dung	-	50*	5*	-	8w	NOEC	growth	10000	6587
	Eisenia foetida	soil + dung	-	50*	5*	-	20w	NOEC	reproduction	1000	659
	Eisenia foetida	soil + dung	-	50*	5*	-	20w	NOEC	growth	> 10000	> 6587
	Lumbricus rubellus	sulphur	7.3	3.4	17	-	12w	NOEC	reproduction	200	196
	Lumbricus rubellus	sandy loam	7.3	8	17	-	6-12w	NOEC	growth	1000	922
Mollusca											
	Arion ater	food	-	30*	0*	-	27d	NOEC	survival, weight, consumption	1000	865
Isopoda											
	Porcellio scaber		-	30*	0*			NOEC		40	35
Insecta											
	Onychiurus armatus	food	-	30*	0*		17w	NOEC	reproduction, growth	1096	948
Acari											
	Platynothrus peltifer	food	-	30*	0*		3m	NOEC	growth, reproduction	430	372
	Platynothrus peltifer	food	-	30*	0*		3m	NOEC	survival	> 1495	> 1293

* personal estimation, based on information in Janus et al. (1999) and Crommentuijn et al. (1997a)

Table F7: Toxicity data for Lead (Janus et al., 1999) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Ammonification	sand	6-7	2.2	5*		14d	NOEC	inhibition	1000	1209
	Respiration	sand	7.7	1.6	2.1		70w	NOEC	inhibition	182	234
	Respiration	sand	5.1	5.7	9		43w	NOEC	inhibition	163	174
	Respiration	sulphur	7.4	2.6	19		90w	NOEC	inhibition	1042	1007
	Respiration	clay	6.8	3.2	60		80w	NOEC	inhibition	3130	1912
	Respiration	peat	4.3	12.8	5		82w	NOEC	inhibition	176	180
	Respiration	loamy sand	4.9	4	5		8w	NOEC	inhibition	12	14
	Respiration	silty loam	6.9	2	44		3m	NOEC	inhibition	29	21
	Respiration	clay	6.7	2	50*		14d	NOEC	inhibition	5000	3390
	Respiration	sand	6.8	2	5*		6d	NOEC	inhibition	1000	1213
	Respiration	litter	-	30*	0*		4w	NOEC	inhibition	> 1013	> 876
	Respiration	sand	6	4	5		5m	NOEC	inhibition	345	404
	N-mineralization	silty loam	6.9	2	44		3m	NOEC	inhibition	202	146
	N-mineralization	soil	5.8	4	23		3w	NOEC	inhibition	517	464
	N-mineralization	soil	6.6	5	45		3w	NOEC	inhibition	517	358
	N-mineralization	soil	7.8	6	30		3w	NOEC	inhibition	345	277
	N-mineralization	soil	7.4	9	34		3w	NOEC	inhibition	1035	770
	Nitrification	soil	5.8	4	23		10d	NOEC	inhibition	345	310
	Nitrification	soil	7.8	6	30		10d	NOEC	inhibition	1035	832
	Nitrification	soil	7.4	9	34		10d	NOEC	inhibition	1035	770
	Nitrification	sand	6-7	2.2	5		14d	NOEC	inhibition	1000	1209
	Glucose mineralisation	-	5	2	9		16d	NOEC	inhibition	1000	1134
	Cellulose mineralisation	loamy sand	-	3	18		30d	NOEC	inhibition	137	133
	Cellulose mineralisation	loamy sand	-	3	18		30d	NOEC	inhibition	150	146
	Cellulose mineralisation	loamy sand	-	3	18		30d	NOEC	inhibition	1037	1010
	Amylase	litter	-	30*	0*		4w	NOEC	inhibition	1013	876
	Cellulase	litter	-	30*	0*		4w	NOEC	inhibition	> 1013	> 876
	Dehydrogenase	sand	4.1	2.8	12		-	NOEC	inhibition	375	400
	Dehydrogenase	clay	7	3.2	96		-	NOEC	inhibition	> 7500	> 3477
	Dehydrogenase	peat	5.6	46	3		-	NOEC	inhibition	> 7500	> 5240
	Phosphatase (acid)	soil	6.5	4	23		1u	NOEC	inhibition	517	464
	Phosphatase (acid)	soil	6.5	4	23		1u	NOEC	inhibition	517	464
	Phosphatase (base)	soil	10	9	34		1u	NOEC	inhibition	517	384
	Phosphatase (base)	soil	10	9	34		1u	NOEC	inhibition	517	384
	Xylanase	litter	-	30*	0*		4w	NOEC	inhibition	> 1000	> 865

* personal estimation, based on information in Janus et al. (1999) and Crommentuijn et al. (1997a)

Table F7: Toxicity data for Lead (Haanstra & Doelman, 1991; Doelman & Haanstra, 1989; Doelman & Haanstra, 1986; Janus et al., 1999) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Phosphatase	sand	7.7	1.6	2	20	18m	EC10	inhibition	201	259
	Phosphatase	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	7128	6905
	Phosphatase	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	1970	1908
	Phosphatase	clay	6.8	3.2	60	20	18m	EC10	inhibition	3730	2279
	Arylsulphatase	sand	7.7	1.6	2	20	6w	EC10	inhibition	7107	9171
	Arylsulphatase	sand	7.7	1.6	2	20	18m	EC10	inhibition	276	356
	Arylsulphatase	sandy loam	5.1	5.7	9	20	18m	EC10	inhibition	2652	2835
	Arylsulphatase	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	7314	7085
	Arylsulphatase	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	1635	1584
	Arylsulphatase	clay	6.8	3.2	60	20	18m	EC10	inhibition	1904	1163
	Urease	sand	7.7	1.6	2	20	18m	EC10	inhibition	860	1110
	Urease	sandy loam	5.1	5.7	9	20	6w	EC10	inhibition	1400	1497
	Urease	sandy loam	5.1	5.7	9	20	18m	EC10	inhibition	2440	2608
	Urease	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	2780	2693
	Urease	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	6860	6645
	Urease	clay	6.8	3.2	60	20	6w	EC10	inhibition	696	425
	Urease	clay	6.8	3.2	60	20	18m	EC10	inhibition	80	49
	Urease	sandy peat	4.3	12.8	5	20	6w	EC10	inhibition	2300	2346
	Urease	sandy peat	4.3	12.8	5	20	18m	EC10	inhibition	6000	6121
	Urease	soil	6.5	4	31		5u	NOEC	inhibition	> 50	> 41
	Urease	soil	6.5	4	31		5u	NOEC	inhibition	> 50	> 41
	Urease	soil	7.3	5	31		5u	NOEC	inhibition	> 50	> 40
	Urease	soil	7.3	5	31		5u	NOEC	inhibition	> 50	> 40
	Urease	soil	9	3	17		2u	NOEC	inhibition	517	511
	Urease	soil	9	3	17		2u	NOEC	inhibition	1035	1023
	Urease	soil	9	6	30		2u	NOEC	inhibition	1035	832
	Urease	soil	9	6	30		2u	NOEC	inhibition	345	277
	Urease	soil	9	4	23		2u	NOEC	inhibition	517	464
	Urease	soil	9	4	23		2u	NOEC	inhibition	103	93
	Urease	soil	9	6	30		2u	NOEC	inhibition	1035	832
	Urease	soil	9	6	30		2u	NOEC	inhibition	103	83
	Urease	soil	9	7	42		2u	NOEC	inhibition	1035	723
	Urease	soil	9	7	42		2u	NOEC	inhibition	1035	723
	Urease	soil	9	9	34		2u	NOEC	inhibition	103	77
	Urease	soil	9	9	34		2u	NOEC	inhibition	103	77

Table F8: Toxicity data for Inorganic Mercury (Slooff et al., 1995)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta										
	Allolobophora chlorotica	sand	-	2	5	-	7d	LC50	mortality	146	170
Chronic toxicity to organisms											
	Oligochaeta										
	Octochaetus pattoni	soil + manure	-	35	6	-	60d	EC40	reproduction	0.5	0.15
	Octochaetus pattoni	soil + manure	-	35	6	-	60d	LC35	mortality	0.5	0.15
	Mollusca										
	Arion ater	food	-	95	0	-	27d	NOEC	food consumption	10	10

Table F8: Toxicity data for Inorganic Mercury (Slooff et al., 1995) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Respiration	sandy loam	7.4	2.9	18		3d	NOEC	inhibition	70	67
	Respiration	Arvada	8.1	2.7	40		28d	NOEC	inhibition	10	7.5
	Respiration	Campspass	6.6	11.4	25		28d	EC11	inhibition	10	4.2
	Respiration	Heldt	8.3	2.9	25		28d	EC87	inhibition	10	0.88
	Respiration	Bainville	7.5	3.2	29		28d	NOEC	inhibition	100	84
	Respiration	Terry	8.3	1.5	12		28d	NOEC	inhibition	100	105
	Respiration	Litter	-	77	0		28d	NOEC	inhibition	10	7.8
	Respiration	clay	7.7	5.6	45		42d	EC20	inhibition	74	17
	Respiration	sand	7.5	1.5	5		42d	EC20	inhibition	74	29
	Respiration	clay	8.3	6.7	50		1d	NOEC	inhibition	40	27
	Respiration	loamy sand	4.9	2.1	5		56d	EC33	inhibition	10	3.9
	Respiration (glucose added)	Mor	5.1	1.3	14		64d	EC20	inhibition	1.3	0.44
	Respiration (glucose added)	Arvada	8.1	2.7	40		6h	NOEC	inhibition	40	30
	Respiration (glucose added)	Campspass	6.6	11.4	25		6h	NOEC	inhibition	40	34
	Respiration (glucose added)	Heldt	8.3	2.9	25		6h	NOEC	inhibition	200	177
	Respiration (glucose added)	Bainville	7.5	3.2	29		6h	NOEC	inhibition	40	34
	Respiration (glucose added)	Terry	8.3	1.5	12		6h	NOEC	inhibition	200	211
	Ammonification	clay	7.7	5.6	45		42d	NOEC	inhibition	7.4	5.2
	Ammonification	sand	7.5	1.5	5		42d	NOEC	inhibition	7.4	8.6
	Ammonification	-	5.8	4.4	23		20d	EC73	inhibition	1000	90
	Ammonification	-	6.6	5	45		20d	EC39	inhibition	1000	237
	Ammonification	-	7.8	6.4	30		20d	EC35	inhibition	1000	273
	Ammonification	-	7.4	9.3	34		20d	EC32	inhibition	1000	258
	Nitrification	-	5.8	4.4	23		10d	EC94	inhibition	200	18
	Nitrification	-	7	6.4	30		10d	EC98	inhibition	200	16
	Nitrification	-	7.4	9.3	34		10d	EC97	inhibition	200	15
	Nitrification	clay	7.7	5.6	45		42d	NOEC	inhibition	7.4	5.2
	Nitrification	sand	7.5	1.5	5		42d	NOEC	inhibition	7.4	8.6
	Amylase	sandy loam	7.4	2.9	18		3d	NOEC	inhibition	70	67
	Invertase	sandy loam	7.4	2.9	18		2d	EC44	inhibition	70	22
	Phosphatase	spar-mor	4.3	93	< 1		3h	NOEC	inhibition	2000	2044
	Phosphatase	mull	6.3	13	29		3h	EC15	inhibition	2000	800
	Phosphatase (acid)	Webster	6.5	4.4	23		1.5h	EC12	inhibition	500	224
	Phosphatase (alkaline)	Okoboij	11	9.3	34		1.5h	NOEC	inhibition	500	387
	Urease	-	5.1	2.6	17		2h	EC89	inhibition	1000	98
	Urease	-	6.1	5.6	30		2h	EC95	inhibition	1000	82
	Urease	-	5.8	4.4	23		2h	EC98	inhibition	1000	90
	Urease	-	7.8	6.4	30		2h	EC29	inhibition	100	27
	Urease	-	6.8	7.4	42		2h	EC89	inhibition	1000	72
	Urease	-	7.4	9.3	34		2h	EC25	inhibition	100	26
	ATP content	agr. soil	6.4	3.2	33.6		48d	NOEC	inhibition	1.4	1.1
	H ₂ -oxidation	sandy loam	7	3	18		16h	EC50	inhibition	14	1.3
	H ₂ -oxidation	sandy loam	7	3	18		16h	EC50	inhibition	11	1.1

Table F9: Toxicity data for Methyl-Mercury (Slooff et al., 1995)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
	Oligochaeta										
	Eisenia foetida	pot soil	-	59	3	-	84d	NOEC	regeneration of segments	3.2	2.6

Table F10: Toxicity data for Molybdenum (Van de Plassche et al., 1992)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	N-mineralisation	-	5.8	4.4	23	30	20d	EC10	inhibition	480	423
	N-mineralisation	-	6.6	5.0	45	30	20d	EC22	inhibition	480	141
	N-mineralisation	-	7.8	6.4	30	30	20d	EC22	inhibition	480	141
	N-mineralisation	-	7.4	9.3	34	30	20d	EC54	inhibition	480	42
	Nitrification	-	5.8	4.4	23	30	10d	EC74	inhibition	480	42
	Nitrification	-	7.8	6.4	30	30	10d	EC39	inhibition	480	141
	Nitrification	-	7.4	9.3	34	30	10d	EC48	inhibition	480	141
	Phosphatase (acid)	clay loam	7.8	6.4	30	37	1h	EC41	inhibition	2400	706
	Phosphatase (acid)	silty clay	7.4	9.3	34	37	1h	EC68	inhibition	2400	212
	Phosphatase (acid)	loam	5.8	4.4	23	37	1h	EC93	inhibition	2400	212
	Phosphatase (acid)	loam	5.8	4.4	23	37	1h	EC69	inhibition	240	21
	Phosphatase (alkaline)	clay loam	7.8	6.4	30	37	1h	EC25	inhibition	2400	706
	Phosphatase (alkaline)	silty clay	7.4	9.3	34	37	1h	EC22	inhibition	2400	706
	Phosphatase (alkaline)	loam	5.8	4.4	23	37	1h	EC12	inhibition	240	106
	Aryl sulfatase	-	6.2	4.6	29	37	1h	EC63	inhibition	2400	212
	Aryl sulfatase	-	7.6	5.5	30	37	1h	EC60	inhibition	2400	212
	Aryl sulfatase	-	7.6	5.5	30	37	1h	EC26	inhibition	240	71
	Aryl sulfatase	-	6.5	5	26	37	1h	EC79	inhibition	2400	212
	Aryl sulfatase	-	6.5	5	26	37	1h	EC40	inhibition	240	71
	Aryl sulfatase	-	7	9	34	37	1h	EC14	inhibition	2400	1059
	Phosphatase	spar-mor	4.3	93	< 1	22	3h	EC79	inhibition	960	85
	Phosphatase	mull	6.3	13	29	22	3h	EC68	inhibition	960	85
	Urease	-	5.1	2.6	17	37	2h	EC7	inhibition	480	423
	Urease	-	6.1	5.6	30	37	2h	EC16	inhibition	480	212
	Urease	-	5.8	4.4	23	37	2h	EC14	inhibition	480	212
	Urease	-	7.8	6.4	30	37	2h	EC12	inhibition	480	212
	Urease	-	7.8	6.4	30	37	2h	EC11	inhibition	50	22
	Urease	-	6.8	7.4	42	37	2h	EC4	inhibition	480	423
	Urease	-	7.4	9.3	34	37	2h	EC16	inhibition	480	212
	Urease	-	7.4	9.3	34	37	2h	EC9	inhibition	50	44

Table F11: Toxicity data for Nickel (Van de Meent et al., 1990b; Haanstra & Doelman, 1991; Doelman & Haanstra, 1989; Doelman & Haanstra, 1986)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
	Oligochaeta										
	Eisenia foetida	-	6	10	20	-	14d	LC50	mortality	757	779
Chronic toxicity to organisms											
	Oligochaeta										
	Lumbricus rubellus	-	7.3	3.4	17	-	12w	NOEC	reproduction	65	74
	Lumbricus rubellus	-	7.3	8	17	-	12w	NOEC	growth	110	126
Toxicity to soil processes											
	Respiration	-	6.8	3.2	60	-	80w	NOEC	inhibition	1039	458
	Glutamic acid mineralization	-	7.7	1.6	2	-	1.5y	EC50	inhibition	898	231
	Glutamic acid mineralization	-	6.8	3.2	60	-	1.5y	EC50	inhibition	620	27
	Glutamic acid mineralization	-	4.3	12.8	5	-	1.5y	EC50	inhibition	1409	290
	Phosphatase	sand	7.7	1.6	2	20	6w	EC10	inhibition	37	95
	Phosphatase	sand	7.7	1.6	2	20	18m	EC10	inhibition	41	105
	Phosphatase	sandy loam	5.1	5.7	9	20	6w	EC10	inhibition	2119	3444
	Phosphatase	sandy loam	5.1	5.7	9	20	18m	EC10	inhibition	6985	11351
	Phosphatase	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	400	426
	Phosphatase	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	250	266
	Phosphatase	clay	6.8	3.2	60	20	18m	EC10	inhibition	380	168
	Arylsulphatase	sand	7.7	1.6	2	20	6w	EC10	inhibition	372	957
	Arylsulphatase	sand	7.7	1.6	2	20	18m	EC10	inhibition	1.2	3.1
	Arylsulphatase	sandy loam	5.1	5.7	9	20	6w	EC10	inhibition	610	991
	Arylsulphatase	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	2207	2350
	Arylsulphatase	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	1.8	1.9
	Arylsulphatase	clay	6.8	3.2	60	20	6w	EC10	inhibition	1068	471
	Arylsulphatase	clay	6.8	3.2	60	20	18m	EC10	inhibition	271	120
	Arylsulphatase	sandy peat	4.3	12.8	5	20	18m	EC10	inhibition	7044	14500
	Urease	sand	7.7	1.6	2	20	6w	EC10	inhibition	30	77
	Urease	sand	7.7	1.6	2	20	18m	EC10	inhibition	120	309
	Urease	sandy loam	5.1	5.7	9	20	6w	EC10	inhibition	860	1398
	Urease	sandy loam	5.1	5.7	9	20	18m	EC10	inhibition	2300	3738
	Urease	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	130	138
	Urease	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	14	15
	Urease	clay	6.8	3.2	60	20	6w	EC10	inhibition	610	269
	Urease	clay	6.8	3.2	60	20	18m	EC10	inhibition	90	40
	Urease	sandy peat	4.3	12.8	5	20	6w	EC10	inhibition	1100	2264
	Urease	sandy peat	4.3	12.8	5	20	18m	EC10	inhibition	540	1112
	Urease	-	7.8	3.74	30	-	2h	NOEC	inhibition	29.4	23

Table F12: Toxicity data for Selenium (Van de Plassche et al., 1992)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Ammonification	-	3.5	5.4	-	26	14d	EC23	stimulation	50	15
	Ammonification	-	3.5	5.4	-	26	14d	EC61	stimulation	250	22
	Ammonification	-	2.7	3.4	-	26	14d	EC26	stimulation	50	15
	Ammonification	-	2.7	3.4	-	26	14d	EC9	inhibition	250	221
	Respiration	-	7.9	7	-	26	14d	EC14	inhibition	250	110
	Respiration	-	7.9	7	-	26	14d	EC19	inhibition	1000	441
	Respiration	-	3.5	5.4	-	26	14d	EC22	inhibition	50	15
	Respiration	-	3.5	5.4	-	26	14d	EC34	inhibition	250	74
	Respiration	-	2.7	3.4	-	26	14d	EC13	stimulation	50	22
	Respiration	-	2.7	3.4	-	26	14d	EC9	inhibition	250	221
	Respiration	silt loam	6.7	3.1	27	20	9d	EC6	inhibition	4	3.5
	Respiration	silt loam	6.7	3.1	27	20	9d	EC64	inhibition	4000	353
	Respiration	clay	5.5	5.5	51	20	9d	EC18	inhibition	4	1.8
	Respiration	clay	5.5	5.5	51	20	9d	EC53	inhibition	4000	353
	Respiration	silt loam	7.2	1.7	21	20	9d	EC14	inhibition	4	1.8
	Respiration	silt loam	7.2	1.7	21	20	9d	EC70	inhibition	4000	353
	Respiration	silt loam	6.2	64	-	20	9d	EC0	inhibition	4	3.5
	Respiration	silt loam	6.2	64	-	20	9d	EC14	inhibition	4000	1764
	Respiration	sandy loam	8.2	4.7	11	20	9d	EC21	inhibition	4	1.2
	Respiration	sandy loam	8.2	4.7	11	20	9d	EC57	inhibition	4000	353
	N-mineralisation	-	5.8	4.4	23	30	20d	EC2	inhibition	400	353
	N-mineralisation	-	6.6	5	45	30	20d	EC3	inhibition	400	353
	N-mineralisation	-	7.8	6.4	30	30	20d	EC9	inhibition	400	353
	N-mineralisation	-	7.4	9.3	34	30	20d	EC8	inhibition	400	353
	N-mineralisation	sandy cambisol	6	2	9	-	8-9y	EC0	inhibition	40	35
	Nitrification	sandy cambisol	6	2	9	-	8-9y	EC20	inhibition	40	12
	Nitrification	-	5.8	4.4	23	30	10d	EC94	inhibition	400	35
	Nitrification	-	7.8	6.4	30	30	10d	EC90	inhibition	400	35
	Nitrification	-	7.4	9.3	34	30	10d	EC88	inhibition	400	35
	Nitrification	-	7.9	7	-	26	14d	EC17	stimulation	250	110
	Nitrification	-	7.9	7	-	26	14d	EC41	stimulation	1000	294
	Nitrification	-	3.5	5.4	-	26	14d	EC33	stimulation	50	15
	Nitrification	-	3.5	5.4	-	26	14d	EC129	stimulation	250	22
	Nitrification	-	2.7	3.4	-	26	14d	EC10	inhibition	50	44
	Nitrification	-	2.7	3.4	-	26	14d	EC0	inhibition	250	221
	Phosphatase (acid)	clay loam	7.8	6.4	30	37	1h	EC39	inhibition	2000	588
	Phosphatase (acid)	silty clay	7.4	9.3	34	37	1h	EC34	inhibition	2000	588
	Phosphatase (acid)	loam	5.8	4.4	23	37	1h	EC24	inhibition	2000	588
	Phosphatase (acid)	loam	5.8	4.4	23	37	1h	EC16	inhibition	200	88
	Phosphatase (alkaline)	clay loam	7.8	6.4	30	37	1h	EC30	inhibition	2000	588
	Phosphatase (alkaline)	silty clay	7.4	9.3	34	37	1h	EC35	inhibition	2000	588
	Phosphatase (alkaline)	loam	5.8	4.4	23	37	1h	EC15	inhibition	200	88

Table F12: Toxicity data for Selenium (Van de Plassche et al., 1992) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Phosphatase (alkaline)	-	7.9	7	-	26	14d	EC0	inhibition	250	221
	Phosphatase (alkaline)	-	7.9	7	-	26	14d	EC18	inhibition	1000	441
	Phosphatase (alkaline)	-	3.5	5.4	-	26	14d	EC1	stimulation	50	44
	Phosphatase (alkaline)	-	3.5	5.4	-	26	14d	EC6	inhibition	250	221
	Phosphatase (alkaline)	-	2.7	3.4	-	26	14d	EC1	inhibition	50	44
	Phosphatase (alkaline)	-	2.7	3.4	-	26	14d	EC12	inhibition	250	110
	Aryl sulfatase	-	6.2	4.6	29	37	1h	EC32	inhibition	2000	588
	Aryl sulfatase	-	7.6	5.5	30	37	1h	EC26	inhibition	2000	588
	Aryl sulfatase	-	7.6	5.5	30	37	1h	EC14	inhibition	200	88
	Aryl sulfatase	-	6.5	5	26	37	1h	EC42	inhibition	2000	588
	Aryl sulfatase	-	6.5	5	26	37	1h	EC21	inhibition	200	59
	Aryl sulfatase	-	7	9	34	37	1h	EC26	inhibition	2000	588
	Aryl sulfatase	-	7.9	7	-	26	14d	EC9	inhibition	250	221
	Aryl sulfatase	-	7.9	7	-	26	14d	EC22	inhibition	1000	294
	Aryl sulfatase	-	3.5	5.4	-	26	14d	EC22	inhibition	50	15
	Aryl sulfatase	-	3.5	5.4	-	26	14d	EC45	inhibition	250	74
	Aryl sulfatase	-	2.7	3.4	-	26	14d	EC11	inhibition	50	22
	Aryl sulfatase	-	2.7	3.4	-	26	14d	EC64	inhibition	250	22
	Dehydrogenase	-	7.9	7	-	26	14d	EC31	inhibition	250	74
	Dehydrogenase	-	7.9	7	-	26	14d	EC66	inhibition	1000	88
	Dehydrogenase	-	3.5	5.4	-	26	14d	EC62	inhibition	50	4.4
	Dehydrogenase	-	3.5	5.4	-	26	14d	EC83	inhibition	250	22
	Urease	-	5.1	2.6	17	37	2h	EC33	inhibition	400	118
	Urease	-	6.1	5.6	30	37	2h	EC24	inhibition	400	118
	Urease	-	5.8	4.4	23	37	2h	EC14	inhibition	400	176
	Urease	-	7.8	6.4	30	37	2h	EC19	inhibition	400	176
	Urease	-	7.8	6.4	30	37	2h	EC5	inhibition	40	35
	Urease	-	6.8	7.4	42	37	2h	EC16	inhibition	400	176
	Urease	-	7.4	9.3	34	37	2h	EC24	inhibition	400	118
	Urease	-	7.4	9.3	34	37	2h	EC9	inhibition	40	35

Table F13: Toxicity data for Tin (Van de Plassche et al., 1992)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Respiration	silt loam	6.7	3.1	27	20	9d	EC21	inhibition	5.9	1.6
	Respiration	silt loam	6.7	3.1	27	20	9d	EC35	inhibition	5900	1632
	Respiration	clay	7	5.5	51	20	9d	EC10	inhibition	5.9	2.9
	Respiration	clay	7	5.5	51	20	9d	EC25	inhibition	5900	953
	Respiration	silt loam	7.2	1.7	21	20	9d	EC18	inhibition	5.9	3.0
	Respiration	silt loam	7.2	1.7	21	20	9d	EC57	inhibition	5900	596
	Respiration	sandy loam	8.2	4.7	11	20	9d	EC11	inhibition	5.9	4.7
	Respiration	sandy loam	8.2	4.7	11	20	9d	EC35	inhibition	5900	3110
	N-mineralisation		5.8	4.4	23	30	20d	EC8	inhibition	590	556
	N-mineralisation		6.6	5	45	30	20d	EC10	inhibition	590	319
	N-mineralisation		7.8	6.4	30	30	20d	EC20	inhibition	590	150
	N-mineralisation		7.4	9.3	34	30	20d	EC11	inhibition	590	203
	N-mineralisation	sandy cambisol	6	2	9		8-9y	EC0	inhibition	120	214
	N-mineralisation	sandy cambisol	6	2	9		8-9y	EC8	inhibition	470	838
	Nitrification	sandy cambisol	6	2	9		8-9y	EC19	inhibition	120	107
	Nitrification	sandy cambisol	6	2	9		8-9y	EC13	inhibition	470	419
	Nitrification		5.8	4.4	23	30	10d	EC94	inhibition	590	56
	Nitrification		7.8	6.4	30	30	10d	EC25	inhibition	590	150
	Nitrification		7.4	9.3	34	30	10d	EC4	inhibition	590	405
	Phosphatase (acid)	clay loam	7.8	6.4	30	37	1h	EC15	inhibition	3000	1143
	Phosphatase (acid)	silty clay	7.4	9.3	34	37	1h	EC21	inhibition	3000	687
	Phosphatase (acid)	loam	5.8	4.4	23	37	1h	EC41	inhibition	3000	942
	Phosphatase (acid)	loam	5.8	4.4	23	37	1h	EC12	inhibition	300	141
	Phosphatase (alkaline)	clay loam	7.8	6.4	30	37	1h	EC25	inhibition	3000	762
	Phosphatase (alkaline)	silty clay	7.4	9.3	34	37	1h	EC38	inhibition	3000	687
	Phosphatase (alkaline)	loam	5.8	4.4	23	37	1h	EC4	inhibition	300	283
	Aryl sulfatase		6.2	4.6	29	37	1h	EC60	inhibition	3000	235
	Aryl sulfatase		7.6	5.5	30	37	1h	EC11	inhibition	3000	1143
	Aryl sulfatase		7.6	5.5	30	37	1h	EC9	inhibition	300	229
	Aryl sulfatase		6.5	5	26	37	1h	EC45	inhibition	3000	855
	Aryl sulfatase		6.5	5	26	37	1h	EC6	inhibition	300	257
	Aryl sulfatase		7	9	34	37	1h	EC32	inhibition	3000	687
	Urease		5.1	2.6	17	37	2h	EC56	inhibition	590	70
	Urease		6.1	5.6	30	37	2h	EC20	inhibition	590	150
	Urease		5.8	4.4	23	37	2h	EC24	inhibition	590	185
	Urease		7.8	6.4	30	37	2h	EC15	inhibition	590	225
	Urease		7.8	6.4	30	37	2h	EC3	inhibition	59	45
	Urease		6.8	7.4	42	37	2h	EC18	inhibition	590	169
	Urease		7.4	9.3	34	37	2h	EC18	inhibition	590	203
	Urease		7.4	9.3	34	37	2h	EC4	inhibition	59	41

Table F14: Toxicity data for Vanadium (Van de Plassche et al., 1992)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Respiration	silt loam	6.7	3.1	27	20	9d	EC6	inhibition	2.6	2.2
	Respiration	silt loam	6.7	3.1	27	20	9d	EC18	inhibition	2600	1085
	Respiration	clay	7	5.5	51	20	9d	EC6	inhibition	2.6	1.3
	Respiration	clay	7	5.5	51	20	9d	EC18	inhibition	2600	658
	Respiration	silt loam	7.2	1.7	21	20	9d	EC18	inhibition	2.6	1.3
	Respiration	silt loam	7.2	1.7	21	20	9d	EC38	inhibition	2600	863
	Respiration	sandy loam	8.2	4.7	11	20	9d	EC6	inhibition	2.6	3.8
	Respiration	sandy loam	8.2	4.7	11	20	9d	EC38	inhibition	2600	1274
	N-mineralisation		5.8	4.4	23	30	20d	EC8	inhibition	260	243
	N-mineralisation		6.6	5	45	30	20d	EC14	inhibition	260	73
	N-mineralisation		7.8	6.4	30	30	20d	EC11	inhibition	260	100
	N-mineralisation		7.4	9.3	34	30	20d	EC14	inhibition	260	91
	N-mineralisation	sandy cambisol	6	2	9		8-9y	EC7	inhibition	400	650
	Nitrification	sandy cambisol	6	2	9		8-9y	EC9	inhibition	100	163
	Nitrification	sandy cambisol	6	2	9		8-9y	EC20	inhibition	400	217
	Nitrification		5.8	4.4	23	30	10d	EC62	inhibition	260	24
	Nitrification		7.8	6.4	30	30	10d	EC12	inhibition	260	100
	Nitrification		7.4	9.3	34	30	10d	EC38	inhibition	260	61
	Phosphatase (acid)	clay loam	7.8	6.4	30	37	1h	EC45	inhibition	1300	335
	Phosphatase (acid)	silty clay	7.4	9.3	34	37	1h	EC55	inhibition	1300	91
	Phosphatase (acid)	loam	5.8	4.4	23	37	1h	EC49	inhibition	1300	405
	Phosphatase (acid)	loam	5.8	4.4	23	37	1h	EC30	inhibition	130	41
	Phosphatase (alkaline)	clay loam	7.8	6.4	30	37	1h	EC61	inhibition	1300	100
	Phosphatase (alkaline)	silty clay	7.4	9.3	34	37	1h	EC60	inhibition	1300	91
	Phosphatase (alkaline)	loam	5.8	4.4	23	37	1h	EC21	inhibition	130	41
	Aryl sulfatase		6.2	4.6	29	37	1h	EC87	inhibition	1300	103
	Aryl sulfatase		7.6	5.5	30	37	1h	EC88	inhibition	1300	100
	Aryl sulfatase		7.6	5.5	30	37	1h	EC32	inhibition	130	33
	Aryl sulfatase		6.5	5	26	37	1h	EC90	inhibition	1300	112
	Aryl sulfatase		6.5	5	26	37	1h	EC76	inhibition	130	11
	Aryl sulfatase		7	9	34	37	1h	EC85	inhibition	1300	91
	Urease		5.1	2.6	17	37	2h	EC39	inhibition	260	99
	Urease		6.1	5.6	30	37	2h	EC17	inhibition	260	100
	Urease		5.8	4.4	23	37	2h	EC18	inhibition	260	122
	Urease		7.8	6.4	30	37	2h	EC17	inhibition	260	100
	Urease		7.8	6.4	30	37	2h	EC3	inhibition	26	20
	Urease		6.8	7.4	42	37	2h	EC18	inhibition	260	77
	Urease		7.4	9.3	34	37	2h	EC28	inhibition	260	61
	Urease		7.4	9.3	34	37	2h	EC13	inhibition	26	9.1

Table F15: Toxicity data for Zinc (Janus, 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	LC50/NOEC stand. soil (mg.kg wwt ⁻¹)
Acute toxicity to organisms											
Oligochaeta											
	Eisenia fetida, adults	art. soil	6	8	8	20	2w	LC50	mortality	660	881
Chronic toxicity to organisms											
Oligochaeta											
	Eisenia fetida, adults	art. soil	6	8	8	20	2w	NOEC	weight	200	267
	Eisenia fetida, 2 weeks	soil + manure	-	50	0	25	6w	NOEC	growth, reproduction	1000	820
	Eisenia fetida	soil + manure	-	50	0	22	8w	NOEC	survival, growth, reproduction	2000	1640
	Eisenia fetida	soil + manure	-	50	0	22	8w	NOEC	survival, growth, reproduction	1000	820
	Eisenia fetida	soil + manure	-	50	0	22	8w	NOEC	survival, growth, reproduction	1000	820
	Eisenia fetida	soil + manure	-	50	0	22	8w	NOEC	survival, growth, reproduction	250	205
	Eisenia fetida	soil + manure	-	50	0	22	20w	NOEC	survival, growth, reproduction	2500	2050
Mollusca											
	Arion ater	food	-	95	0	-	4w	NOEC	consumption, survival, reproduction	300	362
Isopoda											
	Porcellio scaber	food	-	95	0	-	10w	NOEC	consumption, growth, reproduction	400	483
Macrophyta											
	Medicago sativa	sandy loam	7.5	4	16	-	8w	NOEC	yield	≥ 250	≥ 276
	Medicago sativa	sandy loam	7.5	4	16	-	8w	NOEC	yield	≥ 329	≥ 363
	Medicago sativa	sandy loam	7.4	4	16	-	8w	NOEC	yield	≥ 250	≥ 276
	Medicago sativa	sandy loam	7.4	4	16	-	8w	NOEC	yield	≥ 330	≥ 364
	Medicago sativa	sandy loam	7.4	8	16	-	8w	NOEC	yield	≥ 250	≥ 261
	Medicago sativa	sandy loam	7.4	8	16	-	8w	NOEC	yield	≥ 327	≥ 341
	Medicago sativa	sandy loam	7.3	7	16	-	8w	NOEC	yield	≥ 250	≥ 264
	Medicago sativa	sandy loam	7.3	7	16	-	8w	NOEC	yield	≥ 327	≥ 346
	Medicago sativa	mixed loam	7.4	3	23	-	8w	NOEC	yield	≥ 250	≥ 232
	Medicago sativa	mixed loam	7.4	3	23	-	8w	NOEC	yield	≥ 356	≥ 331
	Medicago sativa	sandy loam	7.5	3	14	-	8w	NOEC	yield	≥ 250	≥ 297
	Medicago sativa	sandy loam	7.5	3	14	-	8w	NOEC	yield	≥ 322	≥ 383
	Medicago sativa	sandy loam	7.2	10	13	-	8w	NOEC	yield	≥ 250	≥ 276
	Medicago sativa	sandy loam	7.2	10	13	-	8w	NOEC	yield	≥ 328	≥ 362
	Medicago sativa	sandy loam	4.9	3	16	-	8w	NOEC	yield	50	56
	Medicago sativa	sandy loam	4.9	3	16	-	8w	NOEC	yield	103	115
	Medicago sativa	sandy loam	6.8	3	16	-	8w	NOEC	yield	≥ 250	≥ 280
	Medicago sativa	sandy loam	6.8	3	16	-	8w	NOEC	yield	≥ 302	≥ 338
	Medicago sativa	sandy loam	7.5	3	16	-	8w	NOEC	yield	≥ 250	≥ 280
	Medicago sativa	sandy loam	7.5	3	16	-	8w	NOEC	yield	≥ 301	≥ 337

Table F15: Toxicity data for Zinc (Janus, 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
Macrophyta											
	Zea mays	sandy loam	7.5	4	16	-	6w	NOEC	Yield	≥ 250	≥ 276
	Zea mays	sandy loam	7.5	4	16	-	6w	NOEC	Yield	≥ 329	≥ 363
	Zea mays	sandy loam	7.4	4	16	-	6w	NOEC	Yield	≥ 250	≥ 276
	Zea mays	sandy loam	7.4	4	16	-	6w	NOEC	Yield	≥ 330	≥ 364
	Zea mays	sandy loam	7.4	8	16	-	6w	NOEC	Yield	≥ 250	≥ 261
	Zea mays	sandy loam	7.4	8	16	-	6w	NOEC	Yield	≥ 327	≥ 341
	Zea mays	sandy loam	7.3	7	16	-	6w	NOEC	Yield	≥ 250	≥ 264
	Zea mays	sandy loam	7.3	7	16	-	6w	NOEC	Yield	≥ 327	≥ 346
	Zea mays	mixed loam	7.4	3	23	-	6w	NOEC	Yield	≥ 250	≥ 232
	Zea mays	mixed loam	7.4	3	23	-	6w	NOEC	Yield	≥ 356	≥ 331
	Zea mays	sandy loam	7.5	3	14	-	6w	NOEC	Yield	≥ 250	≥ 297
	Zea mays	sandy loam	7.5	3	14	-	6w	NOEC	Yield	≥ 322	≥ 383
	Zea mays	sandy loam	7.2	10	13	-	6w	NOEC	Yield	≥ 250	≥ 276
	Zea mays	sandy loam	7.2	10	13	-	6w	NOEC	Yield	≥ 328	≥ 362
	Zea mays	sandy loam	4.9	3	16	-	6w	NOEC	Yield	50	56
	Zea mays	sandy loam	4.9	3	16	-	6w	NOEC	Yield	103	115
	Zea mays	sandy loam	5	3	16	-	6w	NOEC	Yield	≥ 250	≥ 280
	Zea mays	sandy loam	5	3	16	-	6w	NOEC	Yield	≥ 303	≥ 339
	Zea mays	sandy loam	6.8	3	16	-	6w	NOEC	Yield	≥ 250	≥ 280
	Zea mays	sandy loam	6.8	3	16	-	6w	NOEC	Yield	≥ 302	≥ 338
	Zea mays	sandy loam	7.5	3	16	-	6w	NOEC	Yield	≥ 250	≥ 280
	Zea mays	sandy loam	7.5	3	16	-	6w	NOEC	Yield	≥ 301	≥ 337
	Zea mays	sandy loam	6.7	3	16	-	6w	NOEC	Yield	10	11
	Zea mays	sandy loam	6.7	3	16	-	6w	NOEC	Yield	61	68
	Avena sativa	loamy soil	5.6	2	12	-	5m	NOEC	Yield	100	129
	Avena sativa	loamy soil	5.6	2	12	-	5m	NOEC	Yield	147	190
	Avena sativa	loamy soil	5.4	2	40	-	5m	NOEC	Yield	200	133
	Avena sativa	loamy soil	5.4	2	40	-	5m	NOEC	Yield	257	171
	Avena sativa	loamy soil	5.2	3	58	-	5m	NOEC	Yield	≥ 800	≥ 402
	Avena sativa	loamy soil	5.2	3	58	-	5m	NOEC	Yield	≥ 936	≥ 470
	Avena sativa	sandy loam	5	3	4	-	5m	NOEC	Yield	200	345
	Avena sativa	sandy loam	5	3	4	-	5m	NOEC	Yield	215	371
	Avena sativa	sandy loam	5.4	7	5	-	5m	NOEC	Yield	400	608
	Avena sativa	sandy loam	5.4	7	5	-	5m	NOEC	Yield	428	651
	Avena sativa	sandy loam	4.6	19	4	-	5m	NOEC	Yield	≥ 800	≥ 1015
	Avena sativa	sandy loam	4.6	19	4	-	5m	NOEC	Yield	≥ 824	≥ 1045

Table F15: Toxicity data for Zinc (Janus, 1993)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Chronic toxicity to organisms											
Macrophyta											
	Lactuca sativa	sandy loam	7.5	4	16	-	6w	NOEC	Yield	≥ 250	≥ 276
	Lactuca sativa	sandy loam	7.5	4	16	-	6w	NOEC	Yield	≥ 329	≥ 363
	Lactuca sativa	sandy loam	7.4	4	16	-	6w	NOEC	Yield	≥ 250	≥ 276
	Lactuca sativa	sandy loam	7.4	4	16	-	6w	NOEC	Yield	≥ 330	≥ 364
	Lactuca sativa	sandy loam	7.4	8	16	-	6w	NOEC	Yield	≥ 250	≥ 261
	Lactuca sativa	sandy loam	7.4	8	16	-	6w	NOEC	Yield	≥ 327	≥ 341
	Lactuca sativa	sandy loam	7.3	7	16	-	6w	NOEC	Yield	≥ 250	≥ 264
	Lactuca sativa	sandy loam	7.3	7	16	-	6w	NOEC	Yield	≥ 327	≥ 346
	Lactuca sativa	mixed loam	7.4	3	23	-	6w	NOEC	Yield	≥ 250	≥ 232
	Lactuca sativa	mixed loam	7.4	3	23	-	6w	NOEC	Yield	≥ 356	≥ 331
	Lactuca sativa	sandy loam	7.5	3	14	-	6w	NOEC	Yield	≥ 250	≥ 297
	Lactuca sativa	sandy loam	7.5	3	14	-	6w	NOEC	Yield	≥ 322	≥ 383
	Lactuca sativa	sandy loam	7.2	10	13	-	6w	NOEC	Yield	≥ 250	≥ 276
	Lactuca sativa	sandy loam	7.2	10	13	-	6w	NOEC	Yield	≥ 328	≥ 362
	Lactuca sativa	sandy loam	4.9	3	16	-	6w	NOEC	Yield	10	11
	Lactuca sativa	sandy loam	4.9	3	16	-	6w	NOEC	Yield	63	71
	Lactuca sativa	sandy loam	5	3	16	-	6w	NOEC	Yield	50	56
	Lactuca sativa	sandy loam	5	3	16	-	6w	NOEC	Yield	103	115
	Lactuca sativa	sandy loam	6.8	3	16	-	6w	NOEC	Yield	≥ 250	≥ 280
	Lactuca sativa	sandy loam	6.8	3	16	-	6w	NOEC	Yield	≥ 302	≥ 338
	Lactuca sativa	sandy loam	7.5	3	16	-	6w	NOEC	Yield	≥ 250	≥ 280
	Lactuca sativa	sandy loam	7.5	3	16	-	6w	NOEC	Yield	≥ 301	≥ 337

Table F15: Toxicity data for Zinc (Janus, 1993; Janus et al., 1996) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Respiration	loamy sand	4.8	7	3	22	3w	NOEC	Inhibition	48	79
	Respiration	litter	-	77	0	22	4w	NOEC	Inhibition	100	69
	Respiration	litter	-	77	0	22	4w	NOEC	Inhibition	111	77
	Respiration	loamy sand	4.9	4	5	30	8w	EC21	Inhibition	10	5.4
	Respiration	loamy sand	4.9	4	5	30	8w	EC21	Inhibition	13	7.0
	Respiration	loamy sand	4.9	4	5	30	8w	EC45	Inhibition	100	54
	Respiration	loamy sand	4.9	4	5	30	8w	EC45	Inhibition	103	56
	Respiration	silt loam	6.9	2	44	25	3m	NOEC	Inhibition	12	7.4
	Respiration	silt loam	6.9	2	44	25	3m	NOEC	Inhibition	19	12
	Respiration	Bagshot sand	6	4	5	30	5m	EC14	Inhibition	1000	808
	Respiration	Bagshot sand	6	4	5	30	5m	EC14	Inhibition	1074	868
	Respiration	sand	7.7	2	2	20	15m	NOEC	Inhibition	150	292
	Respiration	sand	7.7	2	2	20	15m	NOEC	Inhibition	164	319
	Respiration	sand	5.1	2	9	20	10m	NOEC	Inhibition	150	215
	Respiration	sand	5.1	6	9	20	10m	NOEC	Inhibition	167	223
	Respiration	sandy loam	7.4	3	19	20	20m	NOEC	Inhibition	3000	3088
	Respiration	sandy loam	7.4	3	19	20	20m	NOEC	Inhibition	3103	3194
	Respiration	clay	6.8	3	60	20	18m	NOEC	Inhibition	400	196
	Respiration	clay	6.8	3	60	20	18m	NOEC	Inhibition	626	306
	Respiration	sandy peat	4.3	13	5	20	18m	EC9	Inhibition	150	204
	Respiration	sandy peat	4.3	13	5	20	18m	EC9	Inhibition	188	255
	N-mineralization	-	5.8	4.4	23	30	3w	EC14	Inhibition	325	148
	N-mineralization	-	6.6	5	45	30	3w	EC12	Inhibition	325	97
	N-mineralization	-	7.8	6.4	30	30	3w	EC15	Inhibition	325	125
	N-mineralization	-	7.4	9.3	34	30	3w	EC14	Inhibition	325	112
	N-mineralization	silt loam	6.9	2	44	25	3m	NOEC	Inhibition	100	62
	N-mineralization	silt loam	6.9	2	44	25	3m	NOEC	Inhibition	107	66
	Ammonification	sandy loam	6.2	3	17	30	3w	NOEC	Inhibition	1000	1088
	Ammonification	sandy loam	6.2	3	17	30	3w	NOEC	Inhibition	1057	1150
	Ammonification	sandy loam	7.4	3	17	30	3w	NOEC	Inhibition	1000	1088
	Ammonification	sandy loam	7.4	3	17	30	3w	NOEC	Inhibition	1057	1150
	Ammonification	sandy loam	8.5	3	17	30	3w	NOEC	Inhibition	≥ 10000	≥ 10879
	Ammonification	sandy loam	8.5	3	17	30	3w	NOEC	Inhibition	≥ 10057	≥ 10941
	Glucose mineralization	-	5	6	9	25	2w	NOEC	Inhibition	5000	6673
	Glutamic acid mineralization	sand	5.1	2	9	20	1.5y	NOEC	Inhibition	≥ 1000	≥ 1435
	Glutamic acid mineralization	sand	5.1	6	9	20	1.5y	NOEC	Inhibition	≥ 1017	≥ 1357
	Glutamic acid mineralization	sandy loam	7.4	3	19	20	1.5y	NOEC	Inhibition	400	412
	Glutamic acid mineralization	sandy loam	7.4	3	19	20	1.5y	NOEC	Inhibition	503	518
	Glutamic acid mineralization	clay	6.8	3	60	20	1.5y	NOEC	Inhibition	400	196
	Glutamic acid mineralization	clay	6.8	3	60	20	1.5y	NOEC	Inhibition	626	306
	Glutamic acid mineralization	sandy peat	4.3	13	5	20	1.5y	NOEC	Inhibition	≥ 1000	≥ 1358
	Glutamic acid mineralization	sandy peat	4.3	13	5	20	1.5y	NOEC	Inhibition	≥ 1038	≥ 1410

Table F15: Toxicity data for Zinc (Janus, 1993; Janus et al., 1996) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Nitrification	-	5.8	4.4	23	30	10d	EC58	inhibition	325	30
	Nitrification	-	7.8	6.4	30	30	10d	EC24	inhibition	325	83
	Nitrification	-	7.4	9.3	34	30	10d	EC39	inhibition	325	75
	Nitrification	sandy loam	7	3	17	30	3w	NOEC	inhibition	100	109
	Nitrification	sandy loam	7	3	17	30	3w	NOEC	inhibition	157	171
	Nitrification	sandy loam	7.4	3	17	30	3w	NOEC	inhibition	1000	1088
	Nitrification	sandy loam	7.4	3	17	30	3w	NOEC	inhibition	1057	1150
	Nitrification	sandy loam	8.5	3	17	30	3w	NOEC	inhibition	≥ 10000	≥ 10879
	Nitrification	sandy loam	8.5	3	17	30	3w	NOEC	inhibition	≥ 10057	≥ 10941
	Nitrification	clay loam	5.6	2	28	30	7w	NOEC	inhibition	100	84
	Nitrification	clay loam	5.6	2	28	30	7w	NOEC	inhibition	236	198
	Nitrification	sandy loam	5.3	2	8	30	7w	NOEC	inhibition	100	149
	Nitrification	sandy loam	5.3	2	8	30	7w	NOEC	inhibition	124	185
	Nitrification	loamy sand	6	1	2	30	7w	NOEC	inhibition	10	20
	Nitrification	loamy sand	6	1	2	30	7w	NOEC	inhibition	17	34
	Amylase	litter	-	77	0	-	4w	NOEC	inhibition	≥ 1000	≥ 693
	Amylase	litter	-	77	0	-	4w	NOEC	inhibition	≥ 1111	≥ 770
	Cellulase	litter	-	77	0	-	4w	NOEC	inhibition	≥ 1000	≥ 693
	Cellulase	litter	-	77	0	-	4w	NOEC	inhibition	≥ 1111	≥ 770
	Xylanase	litter	-	77	0	-	4w	NOEC	inhibition	≥ 1000	≥ 693
	Xylanase	litter	-	77	0	-	4w	NOEC	inhibition	≥ 1111	≥ 770
	Protease	sandy loam	7.4	3	19	20	1-1.5y	EC50	inhibition	3250	335
	Protease	sandy loam	7.4	3	19	20	1-1.5y	EC50	inhibition	3303	340
	Phosphatase (acid)	-	7	6	30	37	1h	EC32	inhibition	1625	417
	Phosphatase (acid)	-	7	9	34	37	1h	EC33	inhibition	1625	376
	Phosphatase (acid)	-	6.5	4	23	37	1h	EC30	inhibition	1625	497
	Phosphatase (acid)	-	6.5	4	23	37	1h	NOEC	inhibition	162	149
	Phosphatase (alkaline)	-	10	6	30	37	1h	EC59	inhibition	1625	125
	Phosphatase (alkaline)	-	10	9	34	37	1h	EC28	inhibition	1625	376
	Phosphatase (alkaline)	-	10	9	34	37	1h	NOEC	inhibition	162	112
	Urease	-	9	3	17	37	2h	EC61	inhibition	325	35
	Urease	-	9	6	30	37	2h	EC33	inhibition	325	83
	Urease	-	9	4	23	37	2h	EC23	inhibition	325	99
	Urease	-	9	6	30	37	2h	NOEC	inhibition	32	25
	Urease	-	9	7	42	37	2h	EC51	inhibition	325	20
	Urease	-	9	9	34	37	2h	NOEC	inhibition	32	22
	Urease	-	6.5	4	31	37	5h	NOEC	inhibition	≥ 50	≥ 39
	Urease	-	7.3	5	31	37	5h	NOEC	inhibition	≥ 50	≥ 38

Table F15: Toxicity data for Zinc (Haanstra & Doelman, 1991; Doelman & Haanstra, 1989; Doelman & Haanstra, 1986) (continue)

Type	Organism/process	Soil type	pH	%om	% clay	Temp °C	Exp. time	Criterion	Effect type	Result test soil (mg.kg dwt ⁻¹)	NOEC stand. soil (mg.kg wwt ⁻¹)
Toxicity to soil processes											
	Phosphatase	sand	7.7	1.6	2	20	6w	EC10	inhibition	3.9	7.7
	Phosphatase	sand	7.7	1.6	2	20	18m	EC10	inhibition	5.2	10
	Phosphatase	sandy loam	5.1	5.7	9	20	6w	EC10	inhibition	1341	1799
	Phosphatase	sandy loam	5.1	5.7	9	20	18m	EC10	inhibition	570	765
	Phosphatase	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	2622	2721
	Phosphatase	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	300	311
	Phosphatase	clay	6.8	3.2	60	20	6w	EC10	inhibition	160	78
	Phosphatase	clay	6.8	3.2	60	20	18m	EC10	inhibition	36	18
	Arylsulphatase	sand	7.7	1.6	2	20	6w	EC10	inhibition	106	208
	Arylsulphatase	sand	7.7	1.6	2	20	18m	EC10	inhibition	313	615
	Arylsulphatase	sandy loam	5.1	5.7	9	20	6w	EC10	inhibition	732	982
	Arylsulphatase	sandy loam	5.1	5.7	9	20	18m	EC10	inhibition	804	1079
	Arylsulphatase	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	152	158
	Arylsulphatase	silty loam	7.4	2.4	19	20	18m	EC10	inhibition	2720	2823
	Arylsulphatase	clay	6.8	3.2	60	20	6w	EC10	inhibition	2367	1157
	Arylsulphatase	clay	6.8	3.2	60	20	18m	EC10	inhibition	1020	499
	Arylsulphatase	sandy peat	4.3	12.8	5	20	18m	EC10	inhibition	7979	10876
	Urease	sand	7.7	1.6	2	20	6w	EC10	inhibition	70	138
	Urease	sand	7.7	1.6	2	20	18m	EC10	inhibition	160	314
	Urease	sandy loam	5.1	5.7	9	20	6w	EC10	inhibition	30	40
	Urease	sandy loam	5.1	5.7	9	20	18m	EC10	inhibition	1	1.3
	Urease	silty loam	7.4	2.4	19	20	6w	EC10	inhibition	30	31
	Urease	clay	6.8	3.2	60	20	6w	EC10	inhibition	460	225
	Urease	clay	6.8	3.2	60	20	18m	EC10	inhibition	8	3.9
	Urease	sandy peat	4.3	12.8	5	20	6w	EC10	inhibition	5	6.8

APPENDIX G: TERRESTRIAL TOXICITY DATA FOR SPECIES USED FOR EXTRAPOLATION

Substance	Chronic data terrestrial species			Acute data terrestrial species			Compare with PNEC _{EP}
	Trophic levels (number)	lowest NOEC(s) (mg.kg _{wwt} ⁻¹)	Taxonomic group	Taxonomic groups (number)	lowest L(E)C50(s) (mg.kg _{wwt} ⁻¹)	Taxonomic group	
Pesticides							
Aldrin	2	0.2	Nematoda	1	0.2	Insecta	no
Atrazine	2	5.0	Bacteriophyta	1	0.9	Macrophyta	no
Azinphos-methyl	1	150	Macrophyta	2	2.0	Insecta	no
Benomyl	1	0.1	Oligochaeta	0	-		yes
Captafol	1	1.5	Fungi/Bacteriophyta	1	150	Oligochaeta	no
Captan	1	0.44	Fungi	1	63	Oligochaeta	no
Carbaryl	2	7.5	Oligochaeta	1	3.7	Insecta	no
Carbendazim	2	0.2	Oligochaeta	0	-		no
Carbofuran	2	0.15	Oligochaeta	1	0.12	Insecta	no
Chlordane	1	0.7	Fungi	1	1.3	Insecta	no
Chlorfenvinphos	0	-		1	2.2	Insecta	yes
Chloridazone	0	-		1	7.8	Macrophyta	yes
Chlorpyrifos	2	2.8	Oligochaeta	1	0.1	Insecta	no
Cyanazine	0	-		1	0.4	Macrophyta	yes
2,4-D	2	29	Fungi/Bacteriophyta	-	-		no
DDT	0	-		1	2.8	Insecta	yes
Desmetryn	0	-		2	0.25	Macrophyta	no
Diazinon	1	15	Fungi	1	0.19	Insecta	no
Dichlorvos	0	-		1	25	Oligochaeta	yes
Dieldrin	1	7.4	Bacteriophyta	1	0.33	Insecta	no
Dimethoate	-	-		1	17	Oligochaeta	yes
Dinoterb	1	12	Bacteriophyta	0	-		yes
Disulfoton	0	-		1	0.15	Insecta	yes
Diuron	0	-		1	0.24	Macrofyta	yes
DNOC	0	-		1	19	Oligochaeta	yes
Endosulfan	2	15	Algae	2	1.5	Oligochaeta	no
Endrin	0	-		1	0.19	Insecta	yes
Fenitrothion	0	-		1	0.45	Insecta	yes
Heptachlor	0	-		1	0.20	Insecta	yes
Heptenophos	0	-		1	63	Oligochaeta	yes
Lindane	1	8.8	Oligochaeta	1	0.25	Insecta	no
Linuron	0	-		1	1.5	Macrophyta	yes
Malathion	1	5.1	Bacteriophyta	2	130	Nematoda	no
MCPA	1	12	Fungi	0	-		yes
Methomyl	0	-		1	0.16	Insecta	yes
Metolachlor	2	0.83	Macrophyta	0	-		no
Mevinphos	0	-		1	45	Insecta	yes

Substance	Chronic data terrestrial species			Acute data terrestrial species			Compare with PNEC _{EP} ?
	Trophic levels (number)	lowest NOEC(s) (mg.kg _{wwt} ⁻¹)	Taxonomic group	Trophic levels (number)	lowest L(E)C50(s) (mg.kg _{wwt} ⁻¹)	Taxonomic group	
Pesticides							
Parathion-ethyl ^a	3	1.0	Oligochaeta	1	0.1	Insecta	no
Parathion-methyl	0	-		1	0.45	Insecta	yes
Propachlor	1	40	Fungi	0	-		yes
Simazine	1	2	Fungi	1	0.14	Macrophyta	no
2,4,5-T	2	0.15	Macrophyta	2	0.48	Macrophyta	no
Thiram	1	0.73	Fungi/Bacteriophyta	0	-		yes
Tri-allate	2	0.045	Macrophyta	1	4.5	Macrophyta	no
Triazophos	1	48	Macrophyta	0	-		yes
Trichlorfon	0	-		1	26	Insecta	yes
Trifluarin	1	0.14	Bacteriophyta	0	-		yes
Triphenyltin ^b	1	1.0	Isopoda	1	14	Oligochaeta	no
PAHs							
Anthracene	0	-		1	45	Macrophyta	yes
Benzo[a]anthracene	1	0.7	Isopoda	0	-		yes
Benzo[a]pyrene	1	0.8	Oligochaeta	0	-		yes
Aromatics							
Phenol	1	48	Macrophyta	2	56	Oligochaeta	no
Toluene	2	15	Macrophyta	0	-		no
Diethylphtalate	1	0.5	Macrophyta	1	179	Macrophyta	no
Dibutylphtalate	1	48	Macrophyta	1	580	Macrophyta	no
Dimethylphtalate	0	-		2	1.5	Macrophyta	no
Halogenated non-aromatics							
Tetrachloroethylene	0	-		1	46	Oligochaeta	yes
Halogenated aromatics							
Chlorobenzene	0	-		2	179	Oligochaeta	no
1,4-Dichlorobenzene	1	15	Macrophyta	2	94	Oligochaeta	no
1,2,3-Trichlorobenzene	1	1.5	Macrophyta	2	4.3	Macrophyta	no
1,2,4-Trichlorobenzene	1	15	Macrophyta	2	38	Oligochaeta	no
1,3,5-Trichlorobenzene	1	15	Macrophyta	1	178	Macrophyta	no
1,2,3,4-Tetrachlorobenzene	1	15	Macrophyta	2	69	Macrophyta	no
1,2,3,5-Tetrachlorobenzene	0	-		1	3.5	Macrophyta	yes
1,2,4,5-Tetrachlorobenzene	0	-		1	3.0	Macrophyta	yes
Pentachlorobenzene	1	15	Macrophyta	2	3	Oligochaeta	no
Hexachlorobenzene	1	150	Macrophyta	0	-		yes

^a Statistical extrapolation is not applied for parathion-ethyl, because the toxicity data do not follow a log-logistic distribution (significance level of 1%); ^b Toxicological data of Triphenyltin-chloride and Triphenyltin-hydroxide are combined.

Substance	Chronic data terrestrial species			Acute data terrestrial species			Compare with PNEC _{EP} ?
	Trophic levels (number)	lowest NOEC(s) (mg.kg _{wwt} ⁻¹)	Taxonomic group	Trophic levels (number)	lowest L(E)C50(s) (mg.kg _{wwt} ⁻¹)	Taxonomic group	
Halogenated aromatics							
3-Chloroaniline	0	-		2	3	Macrophyta	no
4-Chloroaniline	1	31	Bacteriophyta	0	-		yes
3,4-Chloroaniline	2	1.5	Macrophyta	1	163	Oligochaeta	no
2-Chlorophenol	0	-		1	71	Macrophyta	yes
2,4-Dichlorophenol	0	-		1	57	Macrophyta	yes
2,4,5-Trichlorophenol	0	-		2	23	Macrophyta	no
2,4,6-Trichlorophenol	0	-		2	26	Macrophyta	no
Pentachlorophenol	2	0.5	Macrophyta	2	4.7	Macrophyta	no
2,3,7,8-TCDD	1	3.0	Oligochaeta	0	-		yes
Metals							
Arsenic	2	36	Oligochaeta	0	-		no
Cadmium	2	13	Macrophyta	0	-		no
		10	Macrophyta				
		1.5	Macrophyta				
		2.6	Mollusca				
		90	Oligochaeta				
		3.8	Oligochaeta				
		17 ^c	Oligochaeta				
		9.7	Oligochaeta				
		179	Oligochaeta				
		26	Insecta				
		2.0	Insecta				
		1.2	Isopoda				
		0.89	Acari				
Chromium (III)	2	33	Oligochaeta				no
Chromium (VI)	0	-		0	-		-
Cobalt	1	215	Oligochaeta	0	-		yes
Copper	2	1190	Macrophyta				no
		1190	Macrophyta				
		1190	Macrophyta				
		224	Macrophyta				
		336	Oligochaeta				
		74	Oligochaeta				
		145	Oligochaeta				
		48	Oligochaeta				
		90	Oligochaeta				
		20	Oligochaeta				
		2234	Insecta				
		144	Acari				

Substance	Chronic data terrestrial species			Acute data terrestrial species			Compare with PNEC _{EP} ?
	Trophic levels (number)	lowest NOEC(s) (mg.kg _{wwt} ⁻¹)	Taxonomic group	Trophic levels (number)	lowest L(E)C50(s) (mg.kg _{wwt} ⁻¹)	Taxonomic group	
Metals							
Lead	2	146	Macrophyta	0	-		no
		146	Macrophyta				
		133	Macrophyta				
		484	Oligochaeta				
		659	Oligochaeta				
		196	Oligochaeta				
		865	Mollusca				
		35	Isopoda				
		948	Insecta				
		372	Acari				
Mercury	1	0.15	Oligochaeta	1	170	Oligochaeta	no
Methyl-mercury	1	2.6	Oligochaeta	0	-		yes
Nickel	1	74	Oligochaeta	1	779	Oligochaeta	no
Zinc	2	267	Oligochaeta	1		Oligochaeta	no
		362	Mollusca				no
		483	Isopoda				
		80	Macrophyta				
		47	Macrophyta				
		270	Macrophyta				
		48	Macrophyta				

APPENDIX H: TERRESTRIAL TOXICITY DATA FOR PROCESSES USED FOR EXTRAPOLATION

Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process	Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process
Pesticides				Pesticides			
Anilazine	1	0.9	Nitrification	Malathion	7	11.2	Nitrification (NH ₄)
Atrazine	4	0.07	ATP content			7.5	Nitrification (urea)
Benomyl	1	3.4	Dehydrogenase			0.67	Amidase
Captafol	7	8.5	Amylase			1.1	Ethylene reduction
Captan	3	0.04	Phosphatase			1.2	Glucanase
Carbaryl	1	34.5	Dehydrogenase			0.24	Phosphatase
Carbofuran	2	0.5	Urease			0.41	Urease
Chlordane	5	1.0	Nitrification			312	Urease
		3.5	Sulphur oxidation			148	Urease
		0.5	Dehydrogenase			11	Urease
		5.2	Nitrogenase	Metolachlor	3	5	Nitrification; Phosphatase
		0.5	Urease	Parathion-ethyl ^a	4	0.5	Urease
Chloridazone	2	1.2	Nitrogenase	Propoxur	1	103	Nitrification
Chlorpyrifos	5	15	Nitrification	Simazine	2	25	Nitrification
		4.7	Nitrification	2,4,5-T	2	90	Respiration
		33.5	Sulphur oxidation	Thiram	7	16.8	ATP amount
		2.4	Nitrogenase			16.8	Arginine ammonification
		0.15	Phosphatase			8.2	Arginine ammonification
		0.5	Urease			13.0	Nitrification
2,4-D	3	0.1	Urease			1.5	Nitrification
Diazinon	5	0.07	ATP content			9.7	FDH hydrolysis
		0.67	Amidase			2.0	FDH hydrolysis
		0.50	Dehydrogenase			6.5	Nitrogenase
		0.13	Phosphatase			0.13	Phosphatase
		0.50	Urease			0.23	Urease
Dieldrin	3	1.0	Respiration	Tributyltin	1	5.6	Esterase
Dinoseb	3	0.6	C ₂ H ₄ reduction	Trifluarin	2	5.0	Phosphatase
Diuron	1	1.7	Nitrification	Zineb	1	37	ATP content
Endosulfan	1	37.2	Nitrification				
Ethoprophos	6	15	Nitrification	Halogenated aromatics			
		5.8	S-oxidation	3-Chloroaniline	2	5.0	Nitrification
		3.8	Respiration	4-Chloroaniline	4	75	Respiration
		45	Respiration			38	O ₂ consumption
		0.41	Dehydrogenase			3.8	CO ₂ production
		0.23	Phosphatase			19	ATP content
		4.3	Urease	3,4-Chloroaniline	4	50	Respiration
Isoproturon	1	15	Nitrification			114	CO ₂ production
Linuron	3	1.5	Nitrification			5.0	Nitrification
						168	Acetate mineralisation

^a Statistical extrapolation is not applied for parathion-ethyl, because the toxicity data do not follow a log-logistic distribution (significance level of 1%)

Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process	Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process
Halogenated aromatics				Metals			
Pentachlorophenol	7	3.4	Bio-activity	Barium	4	2583	Phosphatase (acid)
		2.0	ATP content			2325	Phosphatase (acid)
		5.5	Nitrification			1014	Phosphatase (acid)
		12	Nitrification			886	Arylsulphatase
		125	Respiration			338	Arylsulphatase
		270	Acetate mineralisation			659	Arylsulphatase
		23	Acetate mineralisation			1162	Arylsulphatase
		18	H ₂ -oxidation			1291	Phosphatase (alkaline)
		1.5	N ₂ -fixation			2325	Phosphatase (alkaline)
						232	Phosphatase (alkaline)
						820	Urease
Metals						524	Urease
Arsenic, sensitive ^a	4	34	Nitrification			325	Urease
		54	Nitrification			166	Urease
		60	Nitrification			393	Urease
		98	Phosphatase (acid)			149	Urease
		79	Phosphatase (alkaline)	Beryllium	3	4	Respiration
		38	Urease	Chromium (VI)	2	601	Phosphatase
		112	Urease				
		30	Urease				
		84	Urease				
		14	Urease				

^a Because toxicity data of soil processes for arsenic tend to follow a bimodal distribution, the most sensitive group of soil processes are used in the statistical extrapolation

Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{swt} ⁻¹)	Process	Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{swt} ⁻¹)	Process
Metals				Metals			
Cadmium	14	22	Arginine ammonification	Cadmium		224	Respiration
		80	Arginine ammonification			224	Dehydrogenase
		58	ATP content			40	Dehydrogenase
		148	Cellulose respiration			19	Dehydrogenase
		45	Fe(III)-reduction			121	Dehydrogenase
		148	Glucose respiration			22	Dehydrogenase
		49	Nitrification			80	Dehydrogenase
		43	Nitrification			66	Dehydrogenase
		38	Nitrification			71	Dehydrogenase
		29	Nitrification			50	Dehydrogenase
		245	N-mineralization			24	Dehydrogenase
		130	N-mineralization			17	Dehydrogenase
		144	N-mineralization			21	Dehydrogenase
		128	N-mineralization			88	Dehydrogenase
		476	N-mineralization			59	Dehydrogenase
		1526	N-mineralization			48	Dehydrogenase
		349	N-mineralization			70	Dehydrogenase
		272	N-mineralization			59	Dehydrogenase
		224	N-mineralization			51	Urease
		4.3	Arylsulphatase			274	Urease
		3.3	Arylsulphatase			2	Urease
		6.5	Arylsulphatase			1604	Urease
		18	Arylsulphatase			56	Urease
		2155	Arylsulphatase			44	Urease
		122	Phosphatase (acid)			49	Urease
		214	Phosphatase (acid)			21	Urease
		639	Phosphatase (acid)			38	Urease
		147	Respiration			19	Urease
		191	Respiration			214	Phosphatase (alkaline)
		147	Respiration			64	Phosphatase (alkaline)
		324	Respiration			622	Phosphatase
		96	Respiration			732	Phosphatase
		60	Respiration			20	Phosphatase
		48	Respiration			7898	Phosphatase
		46	Respiration			13	Phosphatase
		116	Respiration			533	Phosphatase
		90	Respiration				

Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process	Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process
Metals				Metals			
Copper	10	279	Ammonification	Copper		45	Urease
		8.3 ^a	Ethylene production			29	Urease
		243	Nitrification			8	Urease
		29	Nitrification			20	Urease
		81	Nitrification			11	Urease
		73	Nitrification	Cobalt	7	26	Respiration
		200	N-mineralization			27	Respiration
		244	N-mineralization			55	Respiration
		406	Respiration			86	Respiration
		7.7	Respiration			273	N-mineralization
		440	Respiration			158	N-mineralization
		247	Respiration			221	N-mineralization
		72	Phosphatase (acid)			200	N-mineralization
		407	Phosphatase (acid)			28	Nitrification
		366	Phosphatase (acid)			76	Nitrification
		407	Phosphatase (alkaline)			69	Nitrification
		110	Phosphatase (alkaline)			1145	Phosphatase (acid)
		14	Phosphatase			1034	Phosphatase (acid)
		520	Phosphatase			446	Phosphatase (acid)
		173	Phosphatase			573	Phosphatase (alkaline)
		513	Phosphatase			1034	Phosphatase (alkaline)
		64	Phosphatase			141	Phosphatase (alkaline)
		11	Arylsulphatase			1177	Arylsulphatase
		412	Arylsulphatase			181	Arylsulphatase
		290	Arylsulphatase			1283	Arylsulphatase
		1425	Arylsulphatase			128	Arylsulphatase
		3655	Arylsulphatase			1034	Arylsulphatase
		33	Urease			117	Urease
		142	Urease			115	Urease
		345	Urease			94	Urease
		278	Urease			30	Urease
		231	Urease			58	Urease
		20	Urease			22	Urease
		20	Urease				
		62	Urease				

^a Because copper toxicity data of the soil process 'ethylene production' does not show a large differentiation for different soil types, the geometrical mean of the 'ethylene production' toxicity data for the different types of soil is used in the statistical extrapolation

Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process	Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process
Metals				Metals			
Chromium III	8	3.4	Arylsulphatase	Lead		14	Respiration
		1.3	Arylsulphatase			21	Respiration
		83	Arylsulphatase			3390	Respiration
		143	Arylsulphatase			1213	Respiration
		4014	Arylsulphatase			404	Respiration
		105	Nitrification			146	N-mineralization
		24	Nitrification			464	N-mineralization
		21	Nitrification			358	N-mineralization
		19	Nitrification			277	N-mineralization
		80	N-mineralization			770	N-mineralization
		82	N-mineralization			310	Nitrification
		104	N-mineralization			832	Nitrification
		65	N-mineralization			770	Nitrification
		119	Phosphatase (acid)			1209	Nitrification
		348	Phosphatase (acid)			1134	Glucose mineralisation
		324	Phosphatase (acid)			270	Cellulose mineralisation
		49	Phosphatase (alkaline)			876	Amylase
		348	Phosphatase (alkaline)			400	Dehydrogenase
		1181	Phosphatase			464	Phosphatase (acid)
		1113	Phosphatase			384	Phosphatase (alkaline)
		281	Phosphatase			259	Phosphatase
		1117	Phosphatase			1908	Phosphatase
		559	Phosphatase			2279	Phosphatase
		192	Respiration			356	Arylsulphatase
		125	Respiration			2835	Arylsulphatase
		104	Respiration			1584	Arylsulphatase
		208	Respiration			1163	Arylsulphatase
		637	Urease			1110	Urease
		892	Urease			2608	Urease
		182	Urease			6645	Urease
		529	Urease			49	Urease
		27	Urease			6121	Urease
		70	Urease			511	Urease
		80	Urease			832	Urease
		21	Urease			464	Urease
		86	Urease			832	Urease
		10	Urease			723	Urease
Lead	15	1209	Ammonification			77	Urease
		234	Respiration				
		174	Respiration				
		1007	Respiration				
		1912	Respiration				
		180	Respiration				

Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process	Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process
Metals				Metals			
Nickel	5	458	Respiration	Molybdenum	7	423	N-mineralisation
		231	Glutamic acid mineralization			141	N-mineralisation
		27	Glutamic acid mineralization			141	N-mineralisation
		290	Glutamic acid mineralization			42	N-mineralisation
		105	Phosphatase			42	Nitrification
		11351	Phosphatase			141	Nitrification
		266	Phosphatase			141	Nitrification
		168	Phosphatase			706	Phosphatase (acid)
		3	Arylsulphatase			212	Phosphatase (acid)
		991	Arylsulphatase			67	Phosphatase (acid)
		2	Arylsulphatase			706	Phosphatase (alkaline)
		120	Arylsulphatase			706	Phosphatase (alkaline)
		14500	Arylsulphatase			106	Phosphatase (alkaline)
		309	Urease			85	Phosphatase
		3738	Urease			85	Phosphatase
		15	Urease			212	Aryl sulfatase
		40	Urease			122	Aryl sulfatase
		1112	Urease			122	Aryl sulfatase
		23	Urease			1059	Aryl sulfatase
						423	Urease
						212	Urease
						309	Urease
						3738	Urease
						15	Urease
						40	Urease
						1112	Urease
						23	Urease

Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process	Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process
Metals				Metals			
Inorganic Mercury	11	67	Respiration	Inorganic Mercury		98	Urease
		7.5	Respiration			82	Urease
		4.2	Respiration			90	Urease
		0.88	Respiration			27	Urease
		84	Respiration			72	Urease
		105	Respiration			26	Urease
		7.8	Respiration	Selenium ^a	9	9.9	Dehydrogenase
		17	Respiration	Tin	7	52	Respiration
		29	Respiration			52	Respiration
		27	Respiration			42	Respiration
		3.9	Respiration			120	Respiration
		0.44	Respiration (glucose added)			556	N-mineralization
		30	Respiration (glucose added)			319	N-mineralization
		34	Respiration (glucose added)			150	N-mineralization
		177	Respiration (glucose added)			203	N-mineralization
		34	Respiration (glucose added)			423	N-mineralization
		211	Respiration (glucose added)			212	Nitrification
		5.2	Ammonification			56	Nitrification
		8.6	Ammonification			150	Nitrification
		90	Ammonification			405	Nitrification
		237	Ammonification			1143	Phosphatase (acid)
		273	Ammonification			687	Phosphatase (acid)
		258	Ammonification			365	Phosphatase (acid)
		18	Nitrification			762	Phosphatase (alkaline)
		16	Nitrification			687	Phosphatase (alkaline)
		15	Nitrification			283	Phosphatase (alkaline)
		5.2	Nitrification			235	Arylsulphatase
		8.6	Nitrification			511	Arylsulphatase
		67	Amylase			468	Arylsulphatase
		22	Invertase			687	Arylsulphatase
		2044	Phosphatase			70	Urease
		800	Phosphatase			150	Urease
		224	Phosphatase (acid)			185	Urease
		387	Phosphatase (alkaline)			101	Urease
		1.1	ATP content			169	Urease
		1.2	H ₂ -oxidation			91	Urease

^a Statistical extrapolation is not applied for Selenium, because the toxicity data do not follow a log-logistic distribution (significance level of 1%)

Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process	Substance	Terrestrial processes (type)	NOEC(s) (mg.kg _{wwt} ⁻¹)	Process
Metals				Metals			
Vanadium	7	49	Respiration	Zinc		125	N-mineralization
		29	Respiration			112	N-mineralization
		33	Respiration			64	N-mineralization
		70	Respiration			1118	Ammonification
		243	N-mineralization			1118	Ammonification
		73	N-mineralization			6673	Glutamic acid mineralization
		100	N-mineralization			462	Glutamic acid mineralization
		91	N-mineralization			245	Glutamic acid mineralization
		650	N-mineralization			30	Nitrification
		188	Nitrification			83	Nitrification
		24	Nitrification			75	Nitrification
		100	Nitrification			136	Nitrification
		61	Nitrification			1118	Nitrification
		335	Phosphatase (acid)			129	Nitrification
		91	Phosphatase (acid)			166	Nitrification
		128	Phosphatase (acid)			26	Nitrification
		100	Phosphatase (alkaline)			337	Protease
		91	Phosphatase (alkaline)			396	Phosphatase (acid)
		41	Phosphatase (alkaline)			272	Phosphatase (acid)
		103	Arylsulphatase			125	Phosphatase (alkaline)
		58	Arylsulphatase			205	Phosphatase (alkaline)
		35	Arylsulphatase			35	Urease
		91	Arylsulphatase			45	Urease
		99	Urease			25	Urease
		100	Urease			99	Urease
		122	Urease			20	Urease
		45	Urease			22	Urease
		77	Urease			314	Urease
		24	Urease			1.3	Urease
Zinc	16	79	Respiration			31	Urease
		73	Respiration			3.9	Urease
		18	Respiration			7.8	Urease
		9	Respiration			615	Arylsulphatase
		838	Respiration			1079	Arylsulphatase
		305	Respiration			2823	Arylsulphatase
		219	Respiration			499	Arylsulphatase
		3141	Respiration			10876	Arylsulphatase
		245	Respiration			10	Phosphatase
		228	Respiration			765	Phosphatase
		148	N-mineralization			311	Phosphatase
		97	N-mineralization			18	Phosphatase

APPENDIX I: DATA USED FOR EQUILIBRIUM PARTITION METHOD

Substance	MOLW (g _c .mol ⁻¹)	SOL _{298K} (g _c .m ⁻³)	VP _{298K} (Pa)	Kow (-)	Koc (l.kg ⁻¹)	HENRY _{298K} (Pa.m ³ .mol ⁻¹)	pK _a	PNEC _{aqua} (mg _c .l ⁻¹)
Non-aromatics								
Acrylonitrile	53.1	75500	1.1·10 ⁴	1.8		11.1	-	7.6·10 ⁻³
Acrolein	56.0	2.1·10 ⁵	3.65·10 ⁴	0.1	0.5	2.4	-	7.0·10 ⁻⁶
1,3-Butadiene	54.1	735	2.8·10 ⁵	98	129	2.57·10 ⁵	-	7.1·10 ⁻²
Carbon disulfide	76.1	2400	4.9·10 ⁴	87			-	2.1·10 ⁻³
Ethylene	28.1	260	2.7·10 ⁹	13.5			-	8.5
Formaldehyde	30.0	1.2·10 ⁶	4.5·10 ⁵	2.2		3.2·10 ⁻²	-	2.1·10 ⁻³
Propylene oxide	58.1	4.8·10 ⁵	7.1·10 ⁴	1.1		8.5	-	1.7·10 ⁻¹
Polycyclic aromatic hydrocarbons								
Anthracene	178.2	0.045	0.001	34674	21135		-	3.34·10 ⁻⁵
Naphtalene	128.2	31	10.4	2344	933	49	-	4.2·10 ⁻⁴
Phenanthrene	178.2	1.1	2.0·10 ⁻²	37154	22387		-	3.2·10 ⁻³
Fluoranthrene	202.3	0.26	1.2·10 ⁻³	165959	41687		-	2.4·10 ⁻⁴
Chrysene	228.3	2.0·10 ⁻³	5.7·10 ⁻⁷	316228			-	3.4·10 ⁻⁴
Benzo[a]anthracene	228.3	0.011	2.8·10 ⁻⁵	812831	199526		-	1.0·10 ⁻⁵
Benzo[k]fluoranthrene	252.3	8.0·10 ⁻⁴	5.2·10 ⁻⁸	1.0·10 ⁶			-	3.6·10 ⁻⁶
Benzo[ghi]perylene	268.4	2.6·10 ⁻⁴	1.4·10 ⁻⁸	3.2·10 ⁶			-	3.0·10 ⁻⁵
Benzo[a]pyrene	252.3	2.1·10 ⁻³	7.1·10 ⁻⁷	1.8·10 ⁶		9.2·10 ⁻²	-	5.0·10 ⁻⁶
Indeno[1,2,3-cd]pyrene	276.3	6.2·10 ⁻²	1.3·10 ⁻⁸	3.8·10 ⁶			-	1.8·10 ⁻⁵
Halogenated aromatics								
1,2-Dichlorobenzene	147.0	120	307	2512	302	305	-	2.5·10 ⁻¹
1,3-Dichlorobenzene	147.0	83	90	2512	631	272	-	2.1·10 ⁻¹
1,2,3,5-Tetrachlorobenzene	215.9	3.6	9.8	31623	2399	118	-	2.2·10 ⁻²
1,2,4,5-Tetrachlorobenzene	215.9	1.3	7.2·10 ⁻¹	31623	8128	94	-	2.6·10 ⁻²
Hexachlorobenzene	284.8	5.0·10 ⁻³	2.3·10 ⁻³	316228	10965	78	-	2.4·10 ⁻³
2-Chlorophenol	128.6	24650 ^a	132	148	136	5.7·10 ⁻²	8.5	3.0·10 ⁻³
2,4-Dichlorophenol	163	4500 ^a	12	1589	295		7.7	5.8·10 ⁻³
2,4,5-Trichlorophenol	197.5	948 ^a	2.5	5273	1413		7.4	4.8·10 ⁻³
2,3,4,6-Tetrachlorophenol	231.9	183	2.8·10 ⁻¹	42975	2239		5.4	1.4·10 ⁻³
4-Chloroaniline	127.6	3000 ^a	2.33	68	180	1.1	4.0	8.0·10 ⁻⁴
Benzylchloride	126.6	528	164	200			-	1.3·10 ⁻³
1-Chloro-4-nitrobenzene	157.6	342	2.0	245		3.6	-	3.2·10 ⁻³
Pentachloronitrobenzene	295.3	4.4·10 ⁻¹	6.6·10 ⁻³	44000	23000		-	2.9·10 ⁻⁴
2,3,7,8-TCDD	322	2.5·10 ⁻⁵	2.0·10 ⁻⁷	8.1·10 ⁶	1.8·10 ⁶		-	1.2·10 ⁻⁹
Halogenated non-aromatics								
Dichloromethane	84.9	13200	26222	17.8	36	286	-	20
Trichloromethane	119.4	8200	26244	93.3	65	413	-	5.9
Tetrachloromethane	153.8	800	15250	437	34	3248	-	1.1
1,2-Dichloroethane	99.0	8514	10740	28	42	117	-	14
1,1,1-Trichloroethane	133.4	1495	16500	309	66	2015	-	2.1
Trichloroethylene	131.4	1437	9664	309	110	1028	-	2.4
Tetrachloroethylene	165.8	257	2560	377	240	1742	-	3.3·10 ⁻¹
Vinylchloride	62.5	2763	354600	24		2193	-	8.2
Hexachloro-1,3-butadiene	260.8	3.2	20	50119			-	5.0·10 ⁻⁶
Aromatics								
Benzene	78.1	1752	1.3·10 ⁴	147	79	590	-	2.4

Substance	MOLW (g.c.mol ⁻¹)	SOL _{298K} (g.c.m ⁻³)	VP _{298K} (Pa)	Kow (m ³ .m ⁻³)	Koc (l.kg ⁻¹)	HENRY _{298K} (Pa.m ³ .mol ⁻¹)	pK _a	PNEC _{aqua} (mg.c.l ⁻¹)
Pesticides								
Acephate	183.2	818000	2.3·10 ⁻⁴	0.1	2		-	6.4·10 ⁻³
Aldicarb	190.3	6000	4.0·10 ⁻³	13	17		-	2.0·10 ⁻⁵
Anilazine	275.5	8	8.2·10 ⁻⁷	6300	1000		-	2·10 ⁻⁴
Azinphos-ethyl	345.4	4.8	4.5·10 ⁻⁴	1514			-	1.1·10 ⁻⁵
Benomyl	290.3	2	1.3·10 ⁻⁸	200	1900		-	1.5·10 ⁻⁴
Bentazone	240.3	611 ^a	6.5·10 ⁻⁴	631	33		5	6.4·10 ⁻²
Bifenthrin	422.9	0.1	2.4·10 ⁻⁵	1.0·10 ⁶	223872		-	1.1·10 ⁻⁶
Chlorfenvinphos	359.6	124	1.0·10 ⁻⁴	6607	480		-	3.3·10 ⁻³
Chloridazone	221.6	360	7.0	14	81		-	7.3·10 ⁻²
Chlorothalonil	265.9	0.6	1.3·10 ⁻¹	437	1585		-	8.8·10 ⁻⁴
Chlorpropham	213.7	89	1.0·10 ⁻³	3240	347		-	3.8·10 ⁻²
Coumaphos	362.8	1.6	1.8·10 ⁻⁵	11350	2089		-	7.4·10 ⁻⁷
Cyanazine	240.7	171	2.1·10 ⁻⁷	166	178		-	5.0·10 ⁻⁵
Cypermethrin	416.3	4.0·10 ⁻³	1.9·10 ⁻⁷	4.0·10 ⁶	389		-	1.3·10 ⁻⁷
Cyromazine	166.2	13000	4.5·10 ⁻⁷	1			-	4.5·10 ⁻⁴
DDT	354.5	108.8	2.0·10 ⁻⁵	1.6·10 ⁶	427000		-	5.0·10 ⁻⁶
Deltamethrin	505.2	2.0·10 ⁻³	1.0·10 ⁻⁵	39810	460000		-	3.0·10 ⁻⁷
Demeton	258.3	60	3.5·10 ⁻²	16	71		-	1.4·10 ⁻⁴
Dichlorprop	235.1	350 ^a	4.0·10 ⁻⁴	2690	1000		3.25	4.0·10 ⁻¹
Dichlorvos	221	8000	7.0	28	68		-	7.0·10 ⁻⁷
Dimethoate	229.3	20000	1.0·10 ⁻²	6	58		-	2.3·10 ⁻²
Dinoseb	240.2	4.8 ^a	3.2·10 ⁻¹	3630	195		4.5	2.5·10 ⁻⁵
Dinoterb	240.2	48.5 ^a	2.8·10 ⁻²	5495			4.6	3.4·10 ⁻⁵
Disulfoton	274.4	25	2.0·10 ⁻²	10500	1320		-	2.3·10 ⁻⁵
Diuron	233.1	40	9.2·10 ⁻⁵	603	355		-	4.3·10 ⁻⁴
DNOC	148.1	150 ^a	1.1·10 ⁻²	138	219		4.2	2.1·10 ⁻²
Endrin	380.9	0.23	2.0·10 ⁻⁵	1.6·10 ⁵	19500		-	3.0·10 ⁻⁶
Ethoprophos	242.3	750	5.1·10 ⁻²	3900	68		-	6.3·10 ⁻⁵
Fenitrothion	277.3	30	1.3·10 ⁻⁴	2510	1350		-	8.7·10 ⁻⁶
Fenthion	278.3	50	4.0·10 ⁻³	12600	1510		-	3.1·10 ⁻⁶
Folpet	296.6	1	1.3·10 ⁻³	4300	1900		-	1.2·10 ⁻⁴
Glyphosate	169.1	1.3·10 ⁵	4.0·10 ⁻⁵	3.1·10 ⁻²	3630		5.7	1.6·10 ⁻³
Heptachlor	373.4	6.0·10 ⁻²	5.3·10 ⁻²	186000	24000		-	8.6·10 ⁻⁶
Heptenophos	250.6	2360	1.7·10 ⁻¹	209			-	2.0·10 ⁻⁵
Iprodione	330.2	14	5.0·10 ⁻⁷	1010			-	2.3·10 ⁻³
Isoproturon	206.3	55	3.3·10 ⁻⁶	178	72		-	3.2·10 ⁻³
Linuron	249.1	75	2.3·10 ⁻²	1010	603		-	2.5·10 ⁻⁴
MCPA	200.6	1605 ^a	2.0·10 ⁻⁴	490	54		3.1	4.2·10 ⁻²
Mecoprop	214.6	620 ^a	3.1·10 ⁻⁴	8710	8		3.7	3.9·10 ⁻³
Metamitron	202.2	1820	2.0·10 ⁻⁶	5	158		-	1.0·10 ⁻¹
Metazachlor	277.8	461	6.9·10 ⁻⁵	100	129		-	3.4·10 ⁻²
Methabenzthiazuron	221.3	63	1.5·10 ⁻⁵	204	631		-	8.4·10 ⁻³
Methomyl	162.2	58000	6.7·10 ⁻³	4	23		-	8.0·10 ⁻⁵
Methylbromide	94.9	14000	1700	15		630	-	1.1·10 ⁻²
Metobromuron	259.1	330	4.0·10 ⁻⁴	257	186		-	3.6·10 ⁻²
Mevinphos	224.1	600000	1.7·10 ⁻²	3	631		-	1.6·10 ⁻⁶
Oxamyl	219.3	25000	3.1·10 ⁻²	0.4	11		-	1.8·10 ⁻³
Oxydemeton-methyl	246.3	2.8·10 ⁵	5.4·10 ⁻³	0.2			-	3.5·10 ⁻⁵

Substance	MOLW (g _c .mol ⁻¹)	SOL _{298K} (g _c .m ⁻³)	VP _{298K} (Pa)	Kp-soil (l.kg ⁻¹)	PNEC _{aqua} (mg _c .l ⁻¹)
Metals					
Antimony	121.8	1·10 ⁻¹³	1·10 ⁻³⁰	85	4.6·10 ⁻¹
Barium	137.3	1·10 ⁻¹³	1·10 ⁻³⁰	60	5.8·10 ⁻²
Beryllium	9.0	1·10 ⁻¹³	1·10 ⁻³⁰	38	1.6·10 ⁻⁴
Cobalt	58.9	1·10 ⁻¹³	1·10 ⁻³⁰	40	2.6·10 ⁻³
Methyl-mercury	215.6	1·10 ⁻¹³	1·10 ⁻³⁰	170	1.0·10 ⁻⁵
Molybdenum	95.9	1·10 ⁻¹³	1·10 ⁻³⁰	871	2.9·10 ⁻²
Selenium	79.0	1·10 ⁻¹³	1·10 ⁻³⁰	20	5.3·10 ⁻³
Thallium	204.4	1·10 ⁻¹³	1·10 ⁻³⁰	158	1.6·10 ⁻³
Tin	118.7	1·10 ⁻¹³	1·10 ⁻³⁰	1905	1.8·10 ⁻²
Vanadium	50.9	1·10 ⁻¹³	1·10 ⁻³⁰	309	8.2·10 ⁻⁴

^a set equal to the soil Kp-value of lead at environmental pH=6; ^b set equal to the soil Kp-value of lead at environmental pH=7;