

Supplementary material

Urban geochemistry and potential human health risks in the Metropolitan Area of Buenos Aires: PAHs and PCBs in soil, street dust, and bulk deposition

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Gas chromatographic conditions

The PCBs in the first eluate were analyzed by an Agilent 7890 gas chromatography equipped with a DB-5 capillary column (30 m 0.32 mm 0.25 mm) and an electron capture detector (μ ECD). One microlitre of eluate was injected in splitless mode. Helium was the carrier gas at a constant flow rate of 1 ml/min. The injector temperature was 250°C. The oven temperature was programmed as follows: 65°C held for 1 min, 130°C at 10°C/min and held for 1 min, and 300°C at 5°C/min held for 10 min.

The PAHs in the final eluate were analyzed by an Agilent 7890 gas chromatography equipped with an HP-5 capillary column (30 m 0.32 mm 0.25 mm) and a selective detector tandem MS/MS (Waters-Micromass Quattro Micro). One microlitre of eluate was injected in splitless mode. Helium was the carrier gas at a constant flow rate of 1 ml/min. The injector temperature was 250°C. The oven temperature was programmed as follows: 65°C held for 1 min, 130°C at 10°C/min and held for 1 min, and 300°C at 5°C/min held for 10 min. Mass spectrometer conditions were as follows: ionization mode at EI (70 eV), interface temperature at 280 °C, ion source temperature at 180°C, and quadrupole temperature at 150°C. The detector was set to Selective Ion Monitoring mode

Table 1S. Recoveries of certified reference material (NIST 1944) for PAHs.

%	Recovery (n=9)	
	Mean	St. Dev
NAP	36.0	7.48
ACE	52.7	7.23
ACY	NA	NA
FL	58.3	15.1
PHE	77.9	13.4
ANT	73.4	17.3
FLT	90.8	22.4
PYR	79.0	20.4
BaA	99.7	21.9
CHR	99.0	18.2
BbF	64.2	25.6
BkF	53.8	34.7
BaP	80.8	21.8
BeP	102.4	26.1
IND	74.2	26.3
DBA	70.9	23.6
BghiP	64.2	19.1
ΣPAH	73.6	7.07

Table 2S. Recoveries of certified reference material (NIST 1944) for PCB congeners.

%	Recovery (n=9)		
	# PCB	Mean	St. Dev
	17	NA	NA
	18	85.62	30.22
	31-28	63.30	16.00
	33-53-20	NA	NA
	49	78.80	18.90
	52	74.40	16.70
	44	64.80	15.40
	74	NA	NA
	70	NA	NA
	95-66	55.60	8.80
	101	70.30	12.50
	99	67.50	15.20
	87-115	68.40	12.20
	110-77	74.10	15.80
	151-82	88.00	32.60
	149-123	84.20	14.80
	118	58.60	14.30
	153	67.30	14.70
	132-105	86.60	36.80
	138	86.80	16.80
	158	NA	NA
	187	67.30	26.50
	183	79.30	17.10
	128-167	88.60	23.40
	177	NA	NA
	156	NA	NA
	171	NA	NA
	180	66.30	14.40
	191	NA	NA
	170	62.48	12.37
	199	NA	NA
	208	NA	NA
	195	NA	NA
	207	NA	NA
	194	74.30	18.90
	205	NA	NA
	206	63.50	29.30
	209	106.70	32.80
	ΣPCB	74.28	12.06

NA: Concentration not provided in NIST 1944

Table 3S. Individual PAHs concentrations (ng g⁻¹) in soil, street dust and bulk deposition of the Metropolitan Area of Buenos Aires (MABA).

ng g ⁻¹	Bulk deposition (n=12)				Street dust (n=5)				Soil (n= 10)			
	Mean	St. Dev.	Min	Max	Mean	St. Dev.	Min	Max	Mean	St. Dev.	Min	Max
NAP	182	255	37.3	973	15.2	18.0	4.24	46.9	3.56	2.63	ND	7.12
ACE	87.3	59.7	ND	235	7.63	7.88	1.61	21.2	2.56	3.29	ND	11.5
ACY	72.9	61.9	ND	235	3.35	1.96	1.63	6.44	5.30	5.02	ND	14.6
FL	106	79	ND	269	17.0	4.59	10.7	23.1	3.23	4.64	ND	15.6
PHE	931	1121	188.8	3681	301	217	116	673	93.4	128	5.54	448
ANT	70.9	84.5	ND	309	8.48	16.75	ND	38.4	14.9	17.4	3.64	62.3
FLT	895	1051	191.4	3654	241	287	68.2	746	150	142	14.1	510
PYR	900	1156	231.1	3903	310	266	104	746	146	141	12.5	512
BaA	164	121	ND	480	38.9	28.6	13.1	86.6	77.0	73.0	13.8	250
CHR	642	515	99.6	2039	95.9	51.8	47.3	155	111	88.5	17.5	317
BbF	440	492	56.8	1938	38.3	23.0	17.4	70.1	118	104	16.8	347
BkF	137	131	ND	533	8.30	7.07	ND	19.6	42.7	46.4	4.70	154
BaP	166	156	29.8	626	26.4	26.1	6.56	68.1	77.9	76.4	7.64	251
BeP	361	342	36.1	1256	41.3	32.5	13.7	83.3	85.5	68.3	14.7	233
IND	208	242	ND	950	14.4	11.5	7.74	35.0	60.4	52.0	7.80	165
DBA	83.2	66.8	ND	235	2.99	2.73	ND	7.65	12.6	9.6	1.57	30.6
BghiP	258	230	38.3	919	35.2	37.6	13.6	101	72.8	54.0	8.85	173
*ΣPAH	5704	5137	1130	18488	1205	952	449	2768	1077	985	147	3499
*BaPEq	357	299	74.8	1212	41.7	32.5	15.7	88.6	131	118	14.0	381

*The compounds below the detection limit, were considered as equal to a half of the detection limit

Table 4S. Individual PCB concentrations (ng g⁻¹) in soil, street dust and bulk deposition of the Metropolitan Area of Buenos Aires (MABA).

ng g ⁻¹ # PCB	Bulk deposition (n=12)				Street dust (n=5)				Soil (n= 10)			
	Mean	St. Dev.	Min	Max	Mean	St. Dev.	Min	Max	Mean	St. Dev.	Min	Max
17	3.68	2.81	ND	10.0	0.11	0.02	ND	0.14	0.09	0.04	ND	0.15
18	24.1	27.0	2.45	98.0	0.10	0.01	ND	0.12	0.37	0.61	ND	1.80
31-28	25.2	36.2	2.38	132	1.28	1.11	ND	2.48	0.13	0.05	ND	0.26
33-53-20	16.0	21.0	ND	61.3	0.10	0.01	ND	0.12	0.74	0.53	0.12	1.50
49	11.8	11.0	2.45	41.9	1.09	0.20	0.80	1.29	0.33	0.20	ND	0.58
52	14.0	15.1	ND	53.7	0.74	0.40	ND	1.20	0.18	0.12	0.08	0.43
44	12.1	14.5	2.45	55.0	0.83	0.21	0.58	1.15	0.15	0.09	ND	0.29
74	6.55	6.09	ND	20.3	0.87	0.45	ND	1.20	0.19	0.16	ND	0.52
70	8.14	6.15	2.45	24.7	1.36	0.43	0.90	2.07	0.22	0.22	ND	0.62
95-66	7.34	5.35	2.43	19.4	1.13	0.70	0.60	2.34	0.33	0.17	0.12	0.63
101	14.5	8.77	5.50	32.9	2.39	1.84	1.16	5.64	0.57	0.27	0.15	1.04
99	10.5	8.04	2.45	32.1	1.44	0.82	0.81	2.88	0.50	0.27	0.12	1.08
87-115	11.0	9.64	2.13	35.5	1.56	1.04	0.90	3.40	0.44	0.24	0.05	0.75
110-77	14.5	9.37	2.45	34.2	3.10	3.05	1.39	8.54	1.10	0.56	0.20	2.07
151-82	13.9	9.22	6.25	39.2	1.34	0.60	0.91	2.39	0.64	0.31	0.14	1.19
149-123	11.2	8.70	ND	31.5	2.33	1.83	1.01	5.50	1.20	0.67	0.20	2.50
118	15.4	8.76	7.85	36.9	2.74	2.61	1.10	7.38	1.97	1.68	0.51	6.37
153	8.88	5.49	2.45	18.2	2.24	2.54	0.86	6.77	1.64	1.00	0.13	3.32
132-105	11.2	6.39	3.22	25.1	1.93	1.67	1.07	4.91	0.56	0.59	ND	1.87
138	8.03	4.49	ND	16.3	3.19	3.65	1.23	9.69	2.32	1.22	0.49	4.47
158	5.10	4.28	1.05	14.7	0.36	0.52	ND	1.29	0.16	0.14	0.04	0.46
187	13.7	11.7	4.69	44.6	1.00	0.44	0.68	1.76	0.86	0.44	0.19	1.60
183	8.80	3.23	4.52	14.2	0.87	0.29	0.65	1.36	0.58	0.28	0.12	0.99
128-167	12.7	7.90	6.05	34.9	1.37	0.96	0.82	3.08	0.85	0.39	0.21	1.49
177	10.1	8.49	2.45	34.5	0.82	0.24	0.63	1.22	0.57	0.29	0.12	1.04
156	5.53	3.57	ND	11.9	0.25	0.34	0.09	0.86	0.32	0.21	ND	0.67
171	16.3	13.5	2.45	48.4	1.20	0.43	0.86	1.94	0.55	0.23	0.15	0.91
180	10.9	4.04	5.59	17.4	1.44	0.93	0.85	3.07	1.24	0.70	0.24	2.48
191	10.4	11.5	ND	40.5	0.32	0.50	ND	1.21	0.24	0.21	ND	0.60
170	11.3	9.29	4.45	39.3	1.07	0.50	0.73	1.95	0.82	0.47	0.15	1.72
199	3.75	2.74	ND	10.0	0.44	0.33	ND	0.83	0.37	0.20	ND	0.70
208	5.80	4.84	ND	14.7	0.10	0.01	ND	0.12	0.10	0.03	ND	0.15
195	9.00	9.44	ND	29.1	0.25	0.34	ND	0.87	0.43	0.20	ND	0.70
207	4.40	3.55	ND	11.5	0.10	0.01	ND	0.12	0.10	0.03	ND	0.15
194	13.6	10.5	4.84	39.3	0.76	0.17	0.61	1.02	0.50	0.24	0.11	0.89
205	3.75	2.74	ND	10.0	0.10	0.01	ND	0.12	0.10	0.03	ND	0.15
206	11.3	9.16	ND	32.6	0.23	0.29	ND	0.74	0.44	0.28	ND	1.05
209	8.51	8.55	ND	26.5	0.10	0.01	ND	0.12	0.31	0.23	ND	0.78
*ΣPCB	413	252	175	992	40.6	26.1	20.8	86.5	22.2	9.82	6.43	39.2

*The compounds below the detection limit, were considered as equal to a half of the detection limit

Table 5S. PAH and PCB concentrations (ng g^{-1}) in soil, street dust and bulk deposition of the Metropolitan Area of Buenos Aires (MABA) compared with other urban sites.

Location	PAHs	PCBs	Reference
Soil			
MABA	1077±985	22±9.8	<i>This study</i>
Tarragona, Spain	1002±1523		<i>Nadal et al. (2004)</i>
London, UK	18000 (4000-66000)	103±313	<i>Vane et al. (2014)</i>
Lisbon, Portugal	1544 (6.3-22670)	7.0(0.18-34)	<i>Cachada et al.(2012)</i>
Viseu, Portugal	169 (6.0-790)	4.6(0.08-15)	<i>Cachada et al.(2012)</i>
Istanbul, Turkey	684±609	4.36±1.41	<i>Cetin et al.(2017)</i>
Street dust			
MABA	1205±952	41±26	<i>This study</i>
Isfahan, Iran	1075±760		<i>Soltani et al. (2015)</i>
Lanzhou, China	3900±1960		<i>Jiang et al. (2014)</i>
Westphalia, Germany		355±274 (100-950)	<i>Klees et al. (2015)</i>
New York, US		63-1698	<i>Irvine and Loganathan (1998)</i>
Bulk deposition			
MABA	5704±5137	413±252	<i>This study</i>
Tianjin, China	21000 (997-48183)		<i>Wu et al. (2005)</i>
Beijin, China	11810±4610		<i>Wang et al. (2011)</i>
Chicago, US		30900-48100	<i>Holsen et al.(1991)</i>

Table 6S. Pearson's correlation coefficient for PAHs, concentrations, organic (OM) and clay content of soils and street dust.

	PAH	OM	Clay	NAP	ACE	ACY	FL	PHE	ANT	FLT	PYR	BaA	CHR	BbF	BkF	BaP	BeP	IND	DBA	BghiP
PAH	1.00																			
OM	0.19	1.00																		
Clay	0.25	0.98*	1.00																	
NAP	0.22	-0.06	-0.08	1.00																
ACE	0.78	-0.13	-0.11	0.37	1.00															
ACY	0.66	-0.20	-0.13	0.09	0.45	1.00														
FL	0.66	-0.43	-0.40	-0.07	0.79	0.57	1.00													
PHE	0.80	-0.27	-0.25	0.20	0.92*	0.53	0.93	1.00												
ANT	0.25	0.77	0.80	0.22	-0.03	0.07	-0.39	-0.21	1.00											
FLT	0.98*	0.18	0.22	0.23	0.83	0.61	0.71	0.86*	0.23	1.00										
PYR	0.94*	-0.01	0.01	0.23	0.89*	0.58	0.82	0.95*	-0.01	0.96*	1.00									
BaA	0.88*	0.48	0.56	0.12	0.54	0.59	0.33	0.48	0.53	0.81	0.68	1.00								
CHR	0.97*	0.23	0.28	0.05	0.67	0.67	0.63	0.74	0.23	0.93*	0.88*	0.89*	1.00							
BbF	0.78	0.56	0.62	-0.10	0.30	0.55	0.21	0.31	0.52	0.68	0.54	0.93*	0.86*	1.00						
BkF	0.21	0.29	0.33	-0.53	-0.20	0.23	-0.05	-0.12	0.10	0.06	0.01	0.45	0.40	0.67	1.00					
BaP	0.81	0.65	0.70	0.05	0.36	0.50	0.18	0.33	0.63	0.74	0.58	0.95*	0.85*	0.97*	0.51	1.00				
BeP	0.83	0.58	0.61	-0.01	0.38	0.52	0.26	0.37	0.53	0.75	0.62	0.91*	0.89*	0.98*	0.56	0.98*	1.00			
IND	0.59	0.53	0.59	-0.27	0.06	0.40	0.05	0.11	0.42	0.46	0.34	0.79	0.72	0.94*	0.86*	0.87*	0.89*	1.00		
DBA	0.16	0.33	0.37	-0.48	-0.32	0.10	-0.18	-0.20	0.14	0.01	-0.05	0.39	0.35	0.63	0.95*	0.49	0.53	0.85*	1.00	
BghiP	0.74	0.51	0.54	-0.20	0.28	0.45	0.27	0.33	0.37	0.65	0.56	0.81	0.85	0.95*	0.69	0.90*	0.96*	0.93*	0.66	1.00

The data were log-transformed before analysis (n=15)

p<0.05 in bold number.

*p<0.001

Table 7S. Pearson's correlation coefficient for PCBs, concentrations, organic (OM) and clay content of soils and street dust.

Variables	PCB	OM	Clay	tri-	tetra-	penta-	hexa-	hepta-	octa-	nona-	deca-
PCB	1.00										
OM	-0.11	1.00									
Clay	-0.09	0.98*	1.00								
tri-	0.12	-0.16	-0.21	1.00							
tetra-	0.79	-0.56	-0.57	0.36	1.00						
penta-	0.95*	-0.22	-0.23	0.05	0.82	1.00					
hexa-	0.97*	-0.01	0.03	-0.04	0.67	0.88*	1.00				
hepta-	0.96*	-0.03	-0.01	0.12	0.67	0.85*	0.94*	1.00			
octa-	0.89*	0.20	0.22	0.14	0.51	0.77	0.89*	0.96*	1.00		
nona-	0.46	0.68	0.71	-0.05	-0.07	0.29	0.53	0.54	0.67	1.00	
deca-	0.27	0.48	0.56	0.09	-0.14	0.01	0.36	0.47	0.58	0.75	1.00

The data were log-transformed before analysis (n=15)

p < 0.05 in bold number;

*p < 0.001

Table 8S. Exposure point concentration term (C) and doses (D), hazard quotient (HQ), hazard index (HI) and carcinogenic risk (ILCR) for each compound and exposure pathway

Soil	Non-carcinogenic risk								Carcinogenic risk	
	PCB	BaP	NAP	ANTRA	ACE	FL	FLT	HI	BaP _{eq}	
C (95% UCL) (ug g ⁻¹)	0.047	0.255	0.026	0,039	0,008	0,017	0,569		C (95% UCL) (ng/g)	0,405
Children										
D _{ing} (mg kg ⁻¹ day ⁻¹)	2.5E-07	1.4E-06	1.4E-07	2.1E-07	4.0E-08	9.0E-08	3.0E-06		D _{ing} (mg kg ⁻¹ day ⁻¹)	1.8E-07
D _{inh} (mg kg ⁻¹ day ⁻¹)	9.5E-12	5.2E-11	5.4E-12	7.9E-12	1.5E-12	3.4E-12	1.2E-10		D _{inh} (mg kg ⁻¹ day ⁻¹)	7.0E-12
D _{derm} (mg kg ⁻¹ day ⁻¹)	3.2E-08	1.8E-07	1.8E-08	2.7E-08	5.3E-09	1.2E-08	4.0E-07		D _{derm} (mg kg ⁻¹ day ⁻¹)	2.4E-08
HQ _{ing}	3.5E-02	4.5E-03	7.0E-06	6.8E-07	6.7E-07	2.3E-06	7.5E-05		ILCR _{ing}	1.3E-06
HQ _{inh}	4.7E-07	1.7E-07	6.0E-09	2.6E-11	2.6E-11	8.6E-11	2.9E-09		ILCR _{inh}	2.2E-11
HQ _{derm}	1.6E-03	5.9E-04	9.2E-07	9.0E-08	8.8E-08	3.0E-07	9.9E-06		ILCR _{derm}	6.0E-07
ΣHQ	3.7E-02	5.1E-03	7.9E-06	7.7E-07	7.6E-07	2.5E-06	8.5E-05	0.042	ILCR	1.9E-06
Adults										
D _{ing} (mg kg ⁻¹ day ⁻¹)	3.2E-08	1.8E-07	1.8E-08	2.7E-08	5.2E-09	1.2E-08	3.9E-07		D _{ing} (mg kg ⁻¹ day ⁻¹)	1.2E-07
D _{inh} (mg kg ⁻¹ day ⁻¹)	5.2E-12	2.8E-11	2.9E-12	4.3E-12	8.4E-13	1.9E-12	6.3E-11		D _{inh} (mg kg ⁻¹ day ⁻¹)	1.9E-11
D _{derm} (mg kg ⁻¹ day ⁻¹)	1.7E-08	9.3E-08	9.6E-09	1.4E-08	2.8E-09	6.2E-09	2.1E-07		D _{derm} (mg kg ⁻¹ day ⁻¹)	6.3E-08
HQ _{ing}	4.6E-03	5.9E-04	9.1E-07	8.9E-08	8.7E-08	2.9E-07	9.8E-06		ILCR _{ing}	8.7E-07
HQ _{inh}	2.6E-07	9.5E-08	3.3E-09	1.4E-11	1.4E-11	4.7E-11	1.6E-09		ILCR _{inh}	6.0E-11
HQ _{derm}	8.5E-04	3.1E-04	4.8E-07	4.7E-08	4.6E-08	1.5E-07	5.2E-06		ILCR _{derm}	1.6E-06
ΣHQ	5.4E-03	9.0E-04	1.4E-06	1.4E-07	1.3E-07	4.5E-07	1.5E-05	0.0064	ILCR	2.4E-06

Table 8S (continued). Exposure point concentration term (C) and doses (D), hazard quotient (HQ), hazard index (HI) and carcinogenic risk (ILCR) for each compound and exposure pathway

Street dust	Non-carcinogenic risk								Carcinogenic risk	
	PCB	BaP	NAP	ANTRA	ACE	FL	FLT	HI	BaP _{eq}	
C (95% UCL) (ug/g)	0.090	0.077	0.050	0.051	0.028	0.024	0.970		0.105	
Children										
D _{ing} (mg kg ⁻¹ day ⁻¹)	4.8E-07	4.1E-07	2.7E-07	2.7E-07	1.5E-07	1.3E-07	5.1E-06		D _{ing} (mg kg ⁻¹ day ⁻¹)	4.8E-08
D _{inh} (mg kg ⁻¹ day ⁻¹)	1.8E-11	1.6E-11	1.0E-11	1.0E-11	5.6E-12	4.9E-12	2.0E-10		D _{inh} (mg kg ⁻¹ day ⁻¹)	1.8E-12
D _{derm} (mg kg ⁻¹ day ⁻¹)	6.2E-08	5.4E-08	3.5E-08	3.5E-08	1.9E-08	1.7E-08	6.7E-07		D _{derm} (mg kg ⁻¹ day ⁻¹)	6.3E-09
HQ _{ing}	6.8E-02	1.4E-03	1.3E-05	9.0E-07	2.4E-06	3.2E-06	1.3E-04		ILCR _{ing}	3.5E-07
HQ _{inh}	9.1E-07	5.2E-08	1.1E-08	3.4E-11	9.3E-11	1.2E-10	4.9E-09		ILCR _{inh}	5.7E-12
HQ _{derm}	3.1E-03	1.8E-04	1.7E-06	1.2E-07	3.2E-07	4.2E-07	1.7E-05		ILCR _{derm}	1.6E-07
ΣHQ	7.1E-02	1.5E-03	1.5E-05	1.0E-06	2.8E-06	3.6E-06	1.5E-04	0.073	ILCR	5.0E-07
Adults										
D _{ing} (mg kg ⁻¹ day ⁻¹)	6.2E-08	5.3E-08	3.5E-08	3.5E-08	1.9E-08	1.7E-08	6.7E-07		D _{ing} (mg kg ⁻¹ day ⁻¹)	3.1E-08
D _{inh} (mg kg ⁻¹ day ⁻¹)	1.0E-11	8.6E-12	5.6E-12	5.7E-12	3.1E-12	2.7E-12	1.1E-10		D _{inh} (mg kg ⁻¹ day ⁻¹)	5.0E-12
D _{derm} (mg kg ⁻¹ day ⁻¹)	3.3E-08	2.8E-08	1.8E-08	1.8E-08	1.0E-08	8.8E-09	3.5E-07		D _{derm} (mg kg ⁻¹ day ⁻¹)	1.6E-08
HQ _{ing}	8.8E-03	1.8E-04	1.7E-06	1.2E-07	3.2E-07	4.2E-07	1.7E-05		ILCR _{ing}	2.3E-07
HQ _{inh}	5.0E-07	2.9E-08	6.2E-09	1.9E-11	5.1E-11	6.7E-11	2.7E-09		ILCR _{inh}	1.6E-11
HQ _{derm}	1.6E-03	9.4E-05	9.1E-07	6.2E-08	1.7E-07	2.2E-07	8.8E-06		ILCR _{derm}	4.1E-07
ΣHQ	1.0E-02	2.7E-04	2.6E-06	1.8E-07	4.8E-07	6.4E-07	2.6E-05	0.011	ILCR	6.3E-07

Table 8S (continued). Exposure point concentration term (C) and doses (D), hazard quotient (HQ), hazard index (HI) and carcinogenic risk (ILCR) for each compound and exposure pathway

Bulk deposition	Non-carcinogenic risk							Carcinogenic risk		
	PCB	BaP	NAP	ANTRA	ACE	FL	FLT	HI	BaP _{eq}	
C (95% UCL) (ug/g)	0.624	0.299	0.378	0.111	0.143	0.177	1.772		0.605	
Children										
D _{ing} (mg kg ⁻¹ day ⁻¹)	3.3E-06	1.6E-06	2.0E-06	5.9E-07	7.6E-07	9.4E-07	9.4E-06		D _{ing} (mg kg ⁻¹ day ⁻¹)	2.7E-07
D _{inh} (mg kg ⁻¹ day ⁻¹)	1.3E-10	6.1E-11	7.7E-11	2.3E-11	2.9E-11	3.6E-11	3.6E-10		D _{inh} (mg kg ⁻¹ day ⁻¹)	1.1E-11
D _{derm} (mg kg ⁻¹ day ⁻¹)	4.3E-07	2.1E-07	2.6E-07	7.7E-08	9.9E-08	1.2E-07	1.2E-06		D _{derm} (mg kg ⁻¹ day ⁻¹)	3.6E-08
HQ _{ing}	4.7E-01	5.3E-03	1.0E-04	2.0E-06	1.3E-05	2.3E-05	2.3E-04		CSF _{ing} x D _{ing}	2.0E-06
HQ _{inh}	6.3E-06	2.0E-07	8.5E-08	7.5E-11	4.8E-10	9.0E-10	9.0E-09		CSF _{inh} x D _{inh}	3.3E-11
HQ _{derm}	2.2E-02	6.9E-04	1.3E-05	2.6E-07	1.7E-06	3.1E-06	3.1E-05		CSF _{derm} x D _{derm}	9.0E-07
ΣHQ	4.9E-01	6.0E-03	1.1E-04	2.2E-06	1.4E-05	2.7E-05	2.7E-04	0.500	ILCR	2.9E-06
Adults										
D _{ing} (mg kg ⁻¹ day ⁻¹)	4.3E-07	2.1E-07	2.6E-07	7.6E-08	9.8E-08	1.2E-07	1.2E-06		D _{ing} (mg kg ⁻¹ day ⁻¹)	1.8E-07
D _{inh} (mg kg ⁻¹ day ⁻¹)	6.9E-11	3.3E-11	4.2E-11	1.2E-11	1.6E-11	2.0E-11	2.0E-10		D _{inh} (mg kg ⁻¹ day ⁻¹)	2.9E-11
D _{derm} (mg kg ⁻¹ day ⁻¹)	2.3E-07	1.1E-07	1.4E-07	4.0E-08	5.2E-08	6.4E-08	6.4E-07		D _{derm} (mg kg ⁻¹ day ⁻¹)	9.4E-08
HQ _{ing}	6.1E-02	6.9E-04	1.3E-05	2.5E-07	1.6E-06	3.0E-06	3.1E-05		CSF _{ing} x D _{ing}	1.3E-06
HQ _{inh}	3.5E-06	1.1E-07	4.7E-08	4.1E-11	2.6E-10	4.9E-10	4.9E-09		CSF _{inh} x D _{inh}	8.9E-11
HQ _{derm}	1.1E-02	3.6E-04	6.9E-06	1.3E-07	8.7E-07	1.6E-06	1.6E-05		CSF _{derm} x D _{derm}	2.4E-06
ΣHQ	7.3E-02	1.0E-03	2.0E-05	3.9E-07	2.5E-06	4.7E-06	4.7E-05	0.074	ILCR	3.7E-06

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