

Supplemental Table 1. Selected indoor PBDE studies showing average total and vapor phase concentration (pg m^{-3}). Estimated vapor concentrations use ratios in Supplemental Table 4. All passive samplers were covered with a shelter; ^aNA= not available; ^bSum of congeners 17, 28/33, 47, 85, 99, 100, 153, 154 and 183; ^cPersonal sampling.

Reference	Country	Location	Method	n	Total (vapor + particulate) Concentration						Estimated Vapor Concentration					
					BDE-47	BDE-99	BDE-100	BDE-153	BDE-154	Σ BDE	BDE-47	BDE-99	BDE-100	BDE-153	BDE-154	Σ BDE
Wilford et al., 2004	Canada	Home	Passive ^a	73	160	42	1	106	1.9	260	123	25	0.64	35	0.7	184
Harrad et al., 2004	U.K.	Home	Active	7	420	70	27	1.9	1.9	530	323	42	17	0.6	0.7	383
Harrad et al., 2006	U.K.	Home	Passive	31	NA ^b	NA	NA	NA	NA	52	NA	NA	NA	NA	NA	29
Shoeib et al., 2004	USA	Home	Active	4	NA	NA	NA	NA	NA	1520 ^b	NA	NA	NA	NA	NA	836
Allen et al., 2007	USA	Bedroom	Active	20	<62-780	<57-390	<8.8-100	<3.2-27	<4.2-140	170-1530	<48-600	<34-234	<6-64	<1-9	<1.6-53	90.6-960
Allen et al., 2007	USA	Living room	Active	20	<62-2370	<49-550	<10-160	<0.32-11	<4.2-61	220-3540	<48-1825	<29-320	<6-102	<0.11-3.6	<1.6-23	85-2274
Harrad et al., 2004	U.K.	Office	Active	10	1669	852	217	22	28	2788	1285	511	139	7	11	1953
Harrad et al., 2006	U.K.	Office	Passive	33	NA	NA	NA	NA	NA	166	NA	NA	NA	NA	NA	91
Shoeib et al., 2004	USA	Laboratory	Active	2	NA	NA	NA	NA	NA	380 ^c	NA	NA	NA	NA	NA	209
Pettersson-Julander et al., 2004	Sweden	Electronic recycling facility	Active	12	5100	8000	900	4000	990	77000	3927	4800	576	1320	3762	42350
Harrad et al., 2006	U.K.	Car	Passive	25	NA	NA	NA	NA	NA	709	NA	NA	NA	NA	NA	390

Supplemental Table 2. Selected outdoor PBDE studies from the literature with average total (particulate and vapor phase, if reported) concentrations (pg m^{-3}) Top two highest concentrations shown in bold. Estimated vapor concentrations use ratios in Supplemental Table 4. All passive samplers were covered with a shelter; ^aNA= not available; ^bSum of congeners 17, 28/33, 47, 85, 99, 100, 153,154 and 183; ^cPersonal sampling.

Reference	Country	Location	Method	N	Total (vapor + particulate) Concentration							Estimated Vapor Concentration						
					BDE-47	BDE-99	BDE-100	BDE-153	BDE-154	BDE-209	Σ BDE	BDE-47	BDE-99	BDE-100	BDE-153	BDE-154	BDE-209	Σ BDE
Strandberg et al., 2001	USA	Eagle Harbor	Active	12	2.9	2.1	0.29	0.13	0.088	<0.1	5.5	2.2	1.3	0.19	0.04	0.033	<0.03	3.8
Strandberg et al., 2001	USA	Sturgeon Point	Active	12	3.8	2.8	0.39	0.19	0.11	<0.1	7.2	2.9	1.7	0.25	0.06	0.04	<0.03	5.1
Strandberg et al., 2001	USA	Sleeping Bear Dunes	Active	12	8.4	5.3	0.8	0.25	0.15	<0.1	15	6.5	3.2	0.5	0.08	0.06	<0.03	10
Strandberg et al., 2001	USA	Chicago	Active	12	33	16	2	0.53	0.41	0.3	52	25	9.6	1.3	0.17	0.16	NA	36
Shoeb et al., 2004	USA	Semi-urban	Active	2	NA ^b	NA	NA	NA	NA	NA	43 ^c	NA	NA	NA	NA	NA	NA	24
Hoh & Hites, 2005	USA	Chicago	Active	28	17.4	7.4	1.8	NA	NA	60.1	100	13.4	4.4	1.2	NA	NA	17.4	55
Hoh & Hites, 2005	USA	Michigan	Active	35	6.2	5.1	1.1	NA	NA	1.4	16.2	4.8	3.1	0.7	NA	NA	0.4	8.91
Hoh & Hites, 2005	USA	Indiana	Active	38	7.1	5.1	1	NA	NA	2.2	19	5.5	3.1	0.6	NA	NA	0.6	10.45
Hoh & Hites, 2005	USA	Louisiana	Active	26	6.9	3	0.7	NA	NA	2.8	16.4	5.3	1.8	0.4	NA	NA	0.8	9.02
Hoh & Hites, 2005	USA	Arkansas	Active	30	9.2	5.4	1.2	NA	NA	9.1	30	7.1	3.2	0.8	NA	NA	2.6	16.5
Wilford et al., 2004	Canada	Ottawa	Passive	5	0.87	1.1	0.11	NA	NA	NA	2.2	0.67	0.66	0.07	NA	NA	NA	1.4
Gouin et al., 2002	Canada	Ontario	Active	43	150	110	20	13	8	NA	295	115.5	66.0	12.8	4.29	3.04	NA	201.6
Harrad et al., 2004	UK	Birmingham	Active	6	9.4	5	1.4	2.9	1.8	NA	21	7.2	3	0.9	1	0.7	NA	13
ter Schure et al., 2004	Sweden	Gotska Sandön Island	Active	19	1.8	1.2	0.7	NA	NA	6.1	8.6	1.4	0.72	0.45	NA	NA	1.8	4.4
Gluin et al., 2005	Canada	Ontario	Active (gas)	36	4.6	4.3	NA	NA	NA	NA	15	NA	NA	NA	NA	NA	NA	NA
Gluin et al., 2005	Canada	Ontario	Active (particle)	36	3.8	8.8	1.1	2.5	1.3	NA	20	NA	NA	NA	NA	NA	NA	NA
Gluin et al., 2005	Canada	Ontario	Active	12	2.1	0.8	0.2	0.1	0.1	NA	2.3	1.6	0.48	0.1	0.033	0.04	NA	2.3
Jaward et al., 2005	China		Passive	32	<0.13-78	<0.13-50	<0.13-5.5	NA	NA	NA	<0.13-340	<0.1-60	<0.08-30	<0.08-3.5	NA	NA	NA	<0.07-187
Jaward et al., 2005	Singapore		Passive	10	2.8-10	2.8-5	1-1.5	NA	NA	NA	10-29	2.2-7.7	1.7-3	0.64-0.96	NA	NA	NA	5.5-16
Jaward et al., 2005	Japan		Passive	20	<0.13-1	0.4-1.3	<0.13-0.3	NA	NA	NA	5-71	<0.1-0.8	0.2-0.8	<0.08-0.19	NA	NA	NA	2.8-39
Jaward et al., 2005	South Korea		Passive	15	<0.13-9	<0.13-10	<0.13-2.3	NA	NA	NA	2-27	<0.1-6.9	<0.08-6	<0.08-1.5	NA	NA	NA	1.1-15

Supplemental Table 3. MDLs reported in the literature, and MDLs adjusted to sample volume of 150 m³ and extraction volume of 1 ml. Notes: ^aPeak not present in the blank; ^b NA= not available.

Reference	Location	Sampler	Method	Sample volume (m ³)	Final extract volume (μl)	Unadjusted MDL (pg m ⁻³)				Adjusted MDL (pg m ⁻³)			
						BDE-47	BDE-66	BDE-99	BDE-209	BDE-47	BDE-66	BDE-99	BDE-209
Karlsson et al., 2007	indoor	Active	3*blank value	25	40	117	2.3	158	173	488	10	658	721
Pettersson et al., 2004	indoor	Active	5*S/N ^a or 3*blank	1	40	900	100	1300	700	150	17	217	117
Gouin et al., 2005	outdoor	Active (vapor)	mean blank value+3*SD	250-400	25	0.4	0.08	1.3	NA ^b	35	7	113	NA
Gouin et al., 2005	outdoor	Active (particle)	mean blank value+3*SD	250-400	25	0.3	0.08	0.8	NA	26	7	69	NA

Supplemental Table 4. Ratio of vapor concentration to total concentration in air samples of two studies and average (%).

Reference	Harrad et al., 2004	Strandberg et al., 2001	Average
Sample size	3	-	-
Method	Random selected samples analyzed separately the vapor and particle phase	modeling	-
Temperature (°C)	16-20	20±3	-
BDE-47	66-86	80	77
BDE-99	54-65	55-65	60
BDE-100	63-74	55-65	64
BDE-153	<20-48	30	33
BDE-154	37-48	30	38
BDE-209	-	0	0

Supplemental Table 5. Summary of PBDE recoveries in the literature.

References	Congeners	Recovery (%)
Strandberg et al., 2001	All	8-110
Wilford et al., 2004	BDE-35	116±16
Harrad et al., 2004	All	85 (54-104)
Jaward et al., 2005	All	70-107
Harrad et al., 2006	BDE-153	45
	BDE-47	67
Hazarti & Harrad, 2007	All (Active)	57 (41-78)
Hazarti & Harrad, 2006	All (Passive)	62 (42-80)
	BDE-77	20-95
Karlsson et al., 2007	BDE-139	12-97
	BDE-209	14-89

Supplemental Table 6. Number of measurements with breakthrough <5% compared to total number of samples, grouped by sample volume and congener.

Congener	Sample Volume			Total
	<100 m ³	100 -200 m ³	>200 m ³	
BDE-17	3/3	7/7	3/3	13/13
BDE-28	3/3	8/9	3/3	14/15
BDE-75	0	2/2	1/1	3/3
BDE-47	6/6	6/10	2/3	14/19
BDE-66	1/1	4/4	1/1	6/6
BDE-49	5/5	5/5	1/1	11/11
BDE-71	4/4	6/7	2/3	12/14
BDE-85	0	2/2	2/3	4/5
BDE-100	6/6	7/10	2/3	15/19
BDE-99	6/6	3/10	1/3	10/19
BDE-154	1/1	2/3	3/3	6/7
BDE-153	0	0/1	2/2	2/3
All	33/33	52/70	23/28	108/131