

Concurrent Extraction and Analysis of Atmospheric Particulate Matter-bound PBDEs, PAHs, Nitrated PAHs, and OPEs.

Table S1a. The PAH, N-PAH, and OPE compounds analyzed in the study.

PAHs		N-PAHs		OPEs	
Compounds	Abbr.	Compounds	Abbr.	Compounds	Abbr.
Napthalene	Nap	1-Nitronaphthalene	1-NitroNap	Triethyl phosphate	TEP
Acenaphthylene	AcPy	2-Nitronaphthalene	2-NitroNap	Tri-iso-butyl phosphate	TiBP
Acenaphthene	Acp	5-Nitroacenphthene	5-NitroAcp	Tri-n-butyl phosphate	TnBP
Fluorene	Fl	2-Nitrofluorene	2-NitroFl	Tris(1-chloro-2-propyl) phosphate	TCPP
Phenanthrene	Phe	9-Nitroanthracene	9-NitroAnt	Tris (2-chloroethyl) phosphate	TCEP
Anthracene	Ant	9-Nitrophenanthrene	9-NitroPhe	Tris(2-ethylhexyl) phosphate	TEHP
Fluoranthene	Fla	3-Nitrophenanthrene	3-NitroPhe	Tris(2-butoxyethyl) phosphate	TBEP
Pyrene	Pyr	2-Nitrofluoranthene	2-NitroFla	Tris (1,3-dichloro-2-propyl) phosphate	TDCPP
Benzo[a]anthracene	BaA	3-Nitrofluoranthene	3-NitroFla	2-ethylhexyl diphenyl phosphate	EHDPP
Chrysene	Chr	4-Nitropyrene	4-NitroPyr	Triphenyl phosphate	TPhP
Benzo[b]fluoranthene	BbF	1-Nitropyrene	1-NitroPyr	Tricresyl phosphate	TCP
Benzo[k]fluoranthene	BkF	7-Nitrobenzo(a)anthracene	7-NitroBaA		
Benzo[a]pyrene	BaP	6-NitroChrysene	6-NitroChr		
Indeno(123-cd)pyrene	IcdP				
Dibenz[a,h]anthracene	DahA				
Benzo[g,h,i]perylene	BghiP				

Table S1b. The PBDE compounds analyzed in the study.

Compound	Abbr.
2,4,4'-Tribromodiphenylether (2,4,4'-TriBDE)	PBDE 28
2,2'4,4'-TetraBDE	PBDE 47
2,2',4,4',6-PentaBDE	PBDE 100
2,2',4,4',5-PentaBDE	PBDE 99
2,2',4,4',5,6'-HexaBDE	PBDE 154
2,2',4,4',5,5'-HexaBDE	PBDE 153
2,2',3,4,4',5',6-HeptaBDE	PBDE 183
2,2',3,3',4,4',6,6'-octaBDE	PBDE 197
2,2',3,4,4',5,5',6-octaBDE	PBDE 203
2,2',3,3',4,4',5,6'-octaBDE	PBDE 196
2,2',3,3',4,5,5',6,6'-nonaBDE	PBDE 208
2,2',3,3',4,4',5,6,6'-nonaBDE	PBDE 207

2,2',3,3',4,4',5,5',6-nonaBDE

PBDE 206

decaBDE

PBDE 209

Table S2. Concentrations and recovery rates of isotopically labeled-PBDEs ($\text{pg } \mu\text{L}^{-1}$), deuterated-PAHs (ng mL^{-1}), deuterated-N-PAH (ng mL^{-1}), and deuterated-OPEs (ng mL^{-1}) internal standards.

	Concentrations	Ave (N=30)	SD	RSD (%)
PBDE LCS				
L-BDE 28	25	48.2	8.7	18.0
L-BDE 47	25	66.3	21.7	32.8
L-BDE 99	25	64.4	21.2	32.9
L-BDE 154	50	52.4	8.7	16.6
L-BDE 153	50	59.6	11.1	18.6
L-BDE 183	50	62.5	11.7	18.7
L-BDE 197	50	83.5	28.1	33.6
L-BDE 207	125	65.1	14.5	22.2
L-BDE 209	125	56.0	19.6	35.0
PAHs IS				
Napthalene-d8	400	33.7	10.8	32.0
Acenaphthene-d10	400	49.3	11.0	22.3
Phenanthrene-d10	400	61.6	10.1	16.3
Chrysene-d12	400	64.4	11.8	18.4
Perylene-d12	400	62.6	15.1	24.1
NPAHs IS				
1-Nitronaphthalene-d7	200	66.0	23.7	35.9
9-Nitroanthracene-d9	200	49.6	15.6	31.5
1-Nitropyrene D9	200	94.1	31.0	33.0
6-Nitrochrysene-d11	200	97.2	28.9	29.7
6-Nitrobenzo(a)pyrene-d11	200	77.3	25.3	32.7
OPEs IS				
TEP-d15	400	57.6	18.7	32.5
TBP-d27	400	81.4	17.9	22.0
TCPP-d18	400	85.9	18.4	21.5
TCEP-d12	400	80.9	15.5	19.2
TBOEP-d27	400	82.7	27.0	32.7
TDCIP-d15	400	79.0	16.3	20.6
TPHP-d15	400	70.6	16.3	23.0

Table S3. The comparisons of concentrations between the first and second days of sampling

TSP (concentrations in pg m^{-3})					
Location	Concentrations		1 st -2 nd day	% diff	
	First day	Second day			
A1	63.5	68.9	-5.43	7.88	
A2	39.1	45.1	-6.07	13.4	
A3	67.4	65.2	2.18	3.24	
A4	47.6	43.5	4.10	8.61	
A5	61.4	41.0	20.3	33.1	
PAH (concentrations in pg m^{-3})					
A1	1388	1535	-147	9.58	
A2	704	899	-194	21.6	
A3	1774	1631	143	8.06	
A4	682	503	179	26.3	
A5	973	656	317	32.6	
N-PAH (concentrations in pg m^{-3})					
A1	96.5	257	-161	62.5	
A2	40.4	143	-103	71.8	
A3	179	277	-98.6	35.6	
A4	48.3	39.1	9.20	19.1	
A5	99.2	68.4	30.8	31.0	
OPE (concentrations in pg m^{-3})					
A1	1009	432	577	57.2	
A2	1318	1307	11.1	0.843	
A3	972	550	422	43.4	
A4	690	825	-135	16.4	
A5	2815	965	1850	65.7	
PBDE (concentrations in pg m^{-3})					
A1	13.6	6.88	6.68	49.2	
A2	7.36	11.1	-3.79	34.0	
A3	7.92	11.7	-3.79	32.4	
A4	8.93	7.75	1.17	13.1	
A5	11.6	5.07	6.49	56.2	

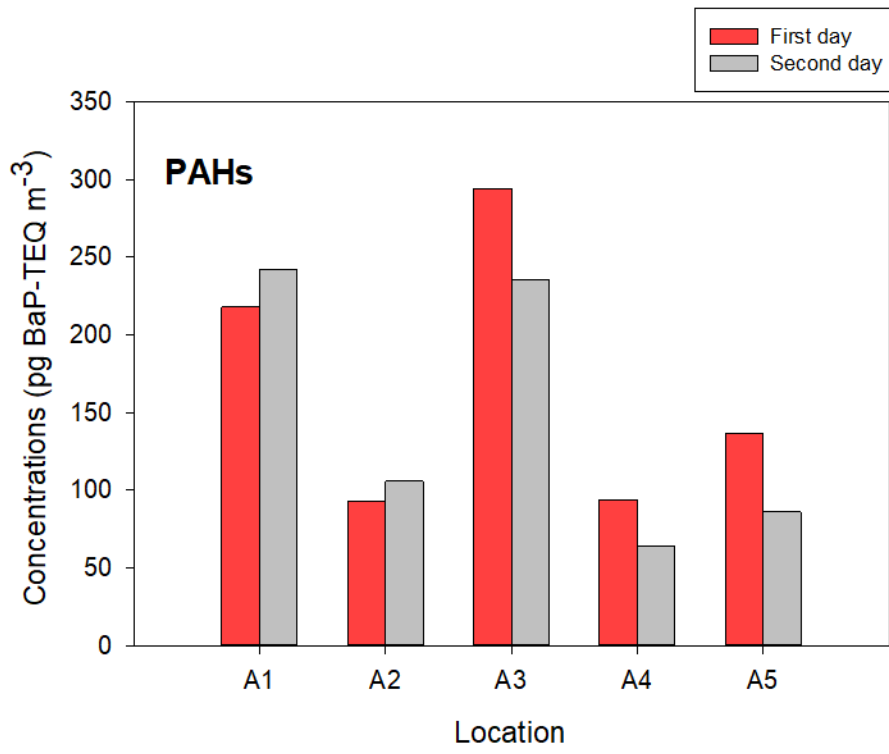


Fig. S1. Toxic PAH concentrations in the five locations during the two days of sampling

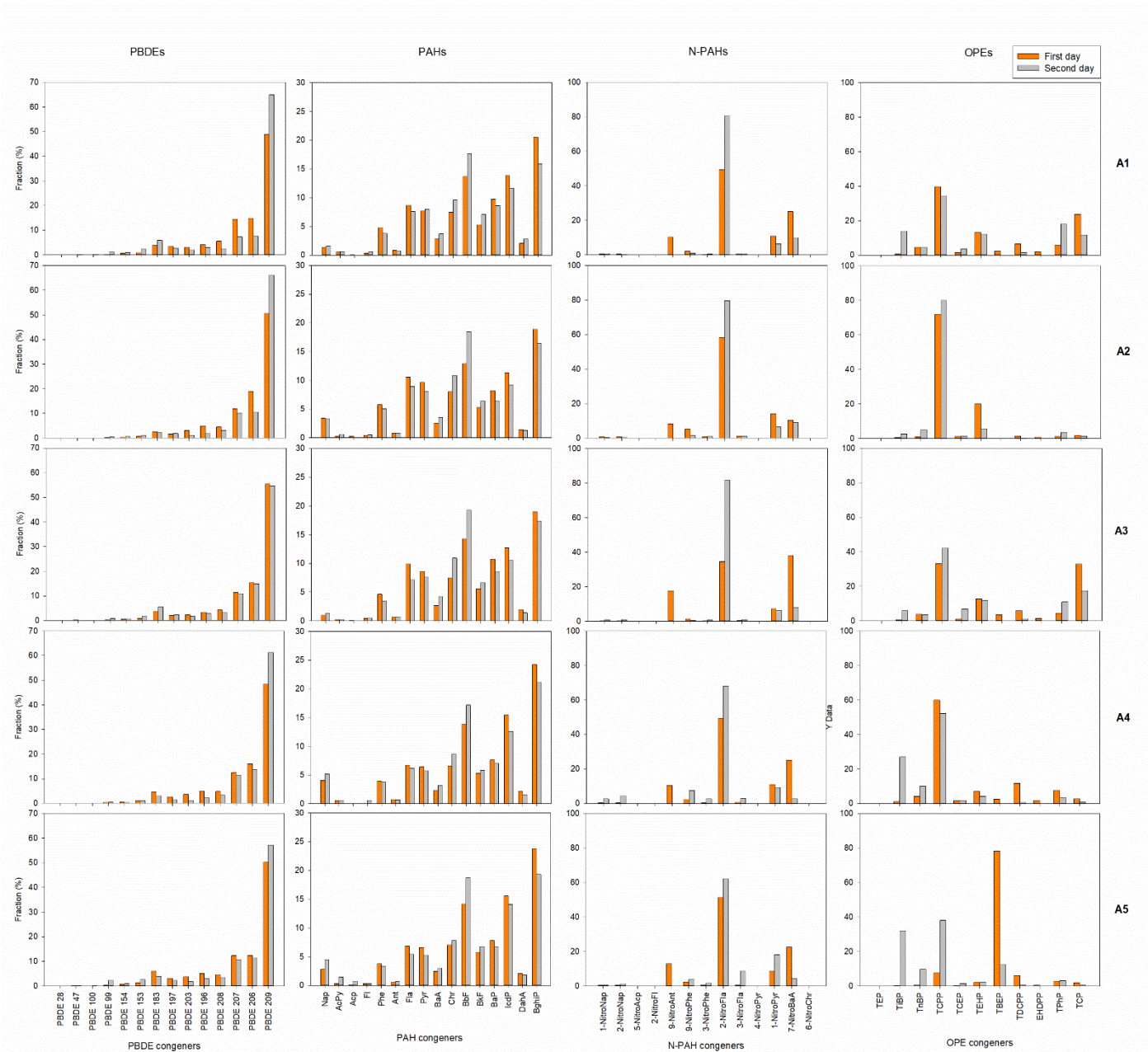


Fig. S2. The congener profiles of the atmospheric total particulate matter-bound PBDE, PAH, N-PAH, and OPE