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Electronic Supplementary Information

Airborne persistent toxic substances (PTSs) in China: occurrence and its application associated with air pollution

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Table S1. Overall concentrations of airborne PCDD/Fs reported in China over the past one and a half decades.

Location	Locale attribute	Number of sample	Sampling technology	Targets	Concentrations	Sampling year	Ref.
Beijing	Urban area	12	High-volume air sampler	17 2,3,7,8-PCDD/Fs	0.28- 10.8 pg m^{-3}, mean 4.36 pg m^{-3}; 18-644 fg I-TEQ m^{-3}, mean 268 fg I-TEQ m^{-3}	2006	20
Beijing	Urban and rural sites	120	High-volume air sampler	17 2,3,7,8-PCDD/Fs	0.22-27 pg m^{-3} 5-470 fg I-TEQ m^{-3}	2007-2010	21
Beijing	Urban area	24	High-volume air sampler	17 2,3,7,8-PCDD/Fs	1.75-10.4 pg m^{-3}, mean 3.67 pg m^{-3}; 35.0-751 fg I-TEQ m^{-3}, mean 251 fg I-TEQ m^{-3}	2011-2012	22
Beijing	Suburban Area	5	High-volume air sampler	17 2,3,7,8-PCDD/Fs	1.5-2.8 pg m^{-3}; 95.4-175 fg I-TEQ m^{-3}	2014	23
Beijing	Urban area	10	High-volume air sampler	17 2,3,7,8-PCDD/Fs	3.98-74.7 pg m^{-3} in the haze days; 0.99-2.85 pg m^{-3} in the normal days	2014	24
Tangshan	Industrial areas	11	High-volume air sampler	17 2,3,7,8-PCDD/Fs	44.2-394 fg I-TEQ m^{-3}, mean 170 fg I- TEQ m^{-3}	2009	25
Dalian	Urban area	11	High-volume air sampler	17 2,3,7,8-PCDD/Fs	3.07-49.5 pg m^{-3} , mean 10.2 pg m^{-3} ; 61.8-1182 fg I-TEQ m^{-3}, mean 235 fg I-TEQ m^{-3}	2009-2010	26
Shanghai	Urban area	25	High-volume air sampler	17 2,3,7,8-PCDD/Fs	0.1-20.7 pg m^{-3}; 2.2-1215 fg I-TEQ m^{-3};	2006	27
Shanghai	Industrial sites	20	High-volume air sampler	17 2,3,7,8-PCDD/Fs	0.26-4.93 pg m^{-3}; 14.2-182 fg TEQ m^{-3}, mean 56.8 fg TEQ m^{-3}	2013	28
Satellite town in Eastern China	around an MSWI	24	High-volume air sampler	17 2,3,7,8-PCDD/Fs	59-3030 fg I-TEQ m^{-3}, mean 495 fg I-TEQ m^{-3}	2007-2008	29
Domestic waste treatment center	MSWI and adjacent village	18	High-volume air sampler	17 2,3,7,8-PCDD/Fs	2.33-2.83 pg Nm^{-3}; 1.64-2.71 pg Nm^{-3}	/	30

in East China							
Taizhou	E-waste area	12	High-volume air sampler	17 2,3,7,8-PCDD/Fs	2.91-50.6 pg m^{-3}; 0.20-3.45 pg I-TEQ m^{-3}	2006	31
Guangzhou	Urban area	23	High-volume air sampler	17 2,3,7,8-PCDD/Fs	Mean values: 3.82-12. 8 pg m^{-3}; 105-431 fg I-TEQ m^{-3}	2004	32
Guiyu	E-waste area	42	High-volume air sampler	17 2,3,7,8-PCDD/Fs	64.9-2365 pg m^{-3}; 0.972-51.2 pg I-TEQ m^{-3}	2005	34
Qingyuan	E-waste area and its neighborhoods	6	High-volume air sampler	17 2,3,7,8-PCDD/Fs	1.2 -583 pg m^{-3}, mean 59.2 pg m^{-3}	2009-2010	35
Across China	background areas	11 sites	High-volume air sampler	17 2,3,7,8-PCDD/Fs	Median: 14.0 fg TEQ m^{-3}	2010	36

Table S2. Overall concentrations of airborne PCBs reported in China over the past one and a half decades.

Location	Locale attribute	Number of sample	Sampling technology	Targets	Concentrations	Sampling year	Ref.
Across China	Urban and rural areas	32	PUF disk-Passive air sampler	29 PCBs	$\sum_7$ indicator PCBs: 7-117 pg m^{-3}; $\sum_{29}$ PCBs: 21-336 pg m^{-3}	2004	37
Across China	Urban, rural and background sites	97	PUF disk-Passive air sampler	60 PCBs	350±218 pg m^{-3} in the urban sites; 230±180 pg m^{-3} in the rural sites; 77±50 pg m^{-3} in the background sites	2005	38
Guangzhou	Urban area	32	High-volume air sampler	64 PCBs	935 pg m^{-3} (160-2720 pg m^{-3})	2004	39
Guangzhou	Urban area	52	Large volume TSP sampler	33 PCBs	184-575 pg m^{-3}, mean 317.6 pg m^{-3}	2006-2007	40
Qingyuan	E-waste area	24	High-volume air sampler	31 PCBs	27.6-1704 pg m^{-3} in the particulate phase; 270-15500 pg m^{-3} in the gaseous phase	2011-2012	48
Qingyuan	E-waste area	60	High-volume air sampler	171 PCBs	7825-76330 pg m^{-3}	2007-2008	49
Shanghai	Industrial sites	20	High-volume air sampler	12 DL-PCBs	0.37-7.61 pg m^{-3}; 1.08-55.9 fg TEQ m^{-3}	2013	28
Shanghai	Urban and rural areas	50	PUF disk-Passive air sampler	12 DL-PCBs	0.85-9.25 pg m^{-3}	2013-2014	43
Suzhou, Wuxi and Nantong	Urban area	21	High-volume air sampler	PCBs	5.00-206 pg m^{-3}, mean 65.8 pg m^{-3}	2009-2010	41
Across the YRD	Urban and rural areas	31	PUF disk-Passive air sampler	7 indicator PCBs	35.0±27.3 pg m^{-3}	2010-2011	42
Taizhou	E-waste area	12	High-volume air	18 PCBs	4.23-11.35 ng m^{-3}, mean 7.22 ng m^{-3};	2006	31

			sampler		0.050-0.859 pg m^{-3}, mean 0.21 pg m^{-3}		
Taizhou	E-waste area	/	High-volume air sampler	38 PCBs	12407 ± 9592 pg m^{-3}	2006-2007	47
Beijing	Urban and rural areas	/	PUF disk-Passive air sampler	29 PCBs	Mean $\sum_7$ indicator PCBs: 45.3 pg m^{-3}; Mean $\sum_{29}$ PCBs: 122 pg m^{-3}	2004	37
Beijing	Urban area	27	PUF disk-Passive air sampler	19 PCBs	$\sum_{19}$PCBs: 22-65 pg m^{-3}	2006-2007	44
Qingdao	Urban area	52	Large volume TSP sampler	7 indicator PCBs	40.7-226 pg m^{-3}, mean 120 pg m^{-3}	2009-2010	45
Qingdao	Urban area	9	High-volume air sampler	PCBs	166-551 pg m^{-3}, mean 360 pg m^{-3}	2003	46
The Yellow River region	Urban area	8	High-volume air sampler	12 DL-PCBs	0.92-3.8 pg m^{-3}	2012	52
Across China	Background area	11 sites	High-volume air sampler	18 PCBs	$\sum_7$PCBs: 4.0-27.5 pg m^{-3}; TEQ of 12 DL-PCBs: 0.3-11.3 fg m^{-3}	2007-2008	50
Tibetan Plateau	Remote area	16 locations	XAD-2-Passive air sampler	15 PCBs	1.8-8.2 pg m^{-3}	2007-2008	51
Tibetan plateau	Remote area	15	High-volume air sampler	56 PCBs	0.10-2.6 pg m^{-3}	2006-2008	105
Southeastern Tibetan Plateau	Remote area	115	PUF disk-Passive air sampler	6 PCBs	Mean 1.4 pg m^{-3}	2008–2011	106
Southeastern Tibetan Plateau	Remote area	36	XAD-2-Passive air sampler	25 PCBs	0.22-2.15 pg m^{-3}, mean 0.86 pg m^{-3}	2010- 2011	107
Lhasa Region	Remote area	19	High-volume air sampler	8 PCBs	Individual congeners: n.d.-37.3 pg m^{-3}	2006-2007	108

Table S3. Overall concentrations of airborne HFRs reported in China over the past one and a half decades.

Location	Locale attribute	Number of sample	Sampling technology	Targets	Concentrations	Sampling year	Ref.
Across China	Urban and rural areas	32	PUF disk-Passive air sampler	8 PBDEs without BDE-209	<0.13-340 pg m^{-3}	2004	37
Across China	Urban, rural and background areas	15 sites	High-volume air sampler	12 PBDEs	11.0-838 pg m^{-3}, mean 232 ± 72 pg m^{-3}	2008-2009	67
Across north China	Urban, rural and background areas	93	PUF disk-Passive air sampler	13 PBDEs including BDE-209; DBDPE	DBDPE: 1.7-270 ng $sample^{-1}$; $\sum_{10}$PBDEs: 0.13−41.4 ng $sample^{-1}$; BDE-209: 0.54−78.2 ng $sample^{-1}$;	2011	68
Chinese cities	Urban areas	10 urban cities; 149 samples	$PM_{2.5}$ sampler	9 PBDE including BDE-209; 6 NBFRs; DP	<0.01-1000 pg m^{-3}; mean 35±150 pg m^{-3}; DBDPE: 0.24-1000 pg m^{-3}, mean of 50 ± 160 pg m^{-3}; HBB: mean 3.5 pg m^{-3}; BTBPE: 0.03-4.4 pg m^{-3}, mean 0.64 pg m^{-3}; syn-DP: 0.07-14 pg m^{-3}; anti-DP: 0.04−12 pg m^{-3}	2013-2014	64
Guangzhou	Urban area	32	High-volume air sampler	11 PBDEs	$\sum_{10}$PBDEs: 41.5-6594 pg m^{-3}; BDE-209: 99.9-1464 pg m^{-3}	2004	70
Guangzhou	Urban area	60	High-volume air sampler	22 PBDEs without BDE-209	204-372 pg m^{-3}	2004	72
Guangzhou	Urban area	52	Large volume TSP sampler	31 PBDEs without BDE-209	Monthly mean range:240-1189 pg m^{-3}; annual mean: 609 pg m^{-3}	2006-2007	40
Guangzhou	Urban areas	4	High-volume air sampler	PBDEs including BDE-209; 3 NBFRs	240-9440 pg m^{-3}; DBDPE: 402-3578 pg m^{-3}; TBBPA-DBPE: 131-1240 pg m^{-3}; BTBPE: 3.83-67.4 pg m^{-3}	2007	71

Guangzhou	$PM_{2.5}$ of households	60	High-volume air sampler	26 PBDEs including BDE-209	52.9-2030 pg m^{-3}, mean 239 pg m^{-3}	2010	74
Guangzhou	Urban area	72	PUF disk-Passive air sampler	PBDEs including BDE-209; 6 NBFRs	PBDEs: 1.21-1522 pg m^{-3} in outdoor air; 1.43-57 pg m^{-3} in indoor air; DBDPE: median 127 pg m^{-3} in outdoor air; median 74.9 pg m^{-3} in indoor air;	2012-2014	65
Hong Kong	Urban area	90	High-volume air sampler	22 PBDEs without BDE-209	33.8-358 pg m^{-3}	2004	72
Hong Kong	$PM_{2.5}$ of households	12	High-volume air sampler	26 PBDEs including BDE-209	0.25-160 pg m^{-3}, mean 43.8 pg m^{-3}	2010	74
Guiyu	E-waste area	30	High-volume air sampler	22 PBDEs without BDE-209	13.2-45.4 ng m^{-3}	2004	72
Guiyu	E-waste area	66	High-volume air sampler	20 PBDEs including BDE-209	0.35-41.5 ng m^{-3}	2005	73
Shanghai	Urban area	25	High-volume air sampler	20 PBDEs including BDE-209; DP	PBDEs: regional mean 108±34-744 ±152 pg m^{-3}; DP: regional mean 2.32±0.50 to 5.48±1.28 pg m^{-3}	2006	76
Shanghai	Urban area	25	High-volume air sampler	HBCD	3.21-123 pg m^{-3}	2006	77
Suzhou, Wuxi and Nantong	Urban area	21	High-volume air sampler	PBDEs including BDE-209	tri- to hepta-BDEs: <LOD-275 pg m^{-3}, mean 38.4 pg m^{-3}; BDE-209: 4.11-2840 pg m^{-3}, mean 954 pg m^{-3}	2009-2010	41
Suzhou, Wuxi and Nantong	Urban area	31	PUF disk-Passive air sampler	13 PBDEs	0.20-43 pg m^{-3}	2010-2011	75
Taizhou	E-waste area	12	High-volume air sampler	9 PBDEs	92- 3086 pg m^{-3}, mean 894 pg m^{-3}; BDE-209: 59-3079 pg m^{-3}, mean 1101 pg m^{-3}	2006	31

Beijing	Urban area	27	PUF disk-Passive air sampler	8 PBDEs	2.3-18 pg m^{-3}	2006-2007	44
Beijing	Urban area	28	High-volume air sampler	9 PBDEs including BDE-209; HBCD	PBDEs: 57-470 pg m^{-3}; HBCD: 20-1800 pg m^{-3}	2008-2009	78
Beijing	Industrial plant	48	High-volume air sampler	42 PBDEs including BDE-209	34.4-7500 pg m^{-3}	/	79
Dalian	Urban area	49	High-volume air sampler	12 PBDEs including BDE-209; DP	PBDEs: 24-549 pg m^{-3}, mean 104±95 pg m^{-3}; DP: mean 3±6 pg m^{-3}	2008-2009	80
Harbin	Urban area	57 paired samples	High-volume air sampler	13 PBDEs including BDE-209; 9 NBFRs	PBDEs: 2.0-320 pg m^{-3}, annual mean 69 pg m^{-3}; NBFRs: 5.3-6900 pg m^{-3}, annual mean 180 pg m^{-3}	2007-2008	81
Harbin	Urban area	227 paired samples	High-volume air sampler	4 NBFRs	EHTBB: mean 5.2±20 pg m^{-3}; BEHTBP: mean 30±200 pg m^{-3}; syn-DP: mean 1.9±5.1 pg m^{-3}; anti-DP: mean 5.8±18 pg m^{-3}	2008-2013	82
The Yellow River region	Urban area	8	High-volume air sampler	9 PBDEs including BDE-209; 5 NBFRs; DP	PBDEs: 310-5200 pg m^{-3}; PBBz: 5.4-130 pg m^{-3}; HBB: 2.2-140 pg m^{-3}; PBT: 4.0-86 pg m^{-3}; pTBX: 2.2-10 pg m^{-3}; PBEB: 0.09-1.52 pg m^{-3}; DP: 0.23-4.0 pg m^{-3}, median 0.52 pg m^{-3}	2012	52
Tibetan Plateau	Remote area	16 locations	XAD-2-Passive air sampler	9 PBDEs without BDE-209	0.1-8.3 pg m^{-3}	2007-2008	51
Southeastern Tibetan Plateau	Remote area	36	XAD-2-Passive air sampler	13 PBDEs; HBCD	PBDEs: n.d.-0.26 pg m^{-3}, mean 0.08 pg m^{-3}; HBCD: n.d.-2.84 pg m^{-3}, mean 0.25 pg m^{-3}	2010-2011	107

Table S4. Overall concentrations of airborne PFCs reported in China over the past one and a half decades.

Location	Locale attribute	Number of sample	Sampling technology	Targets	Concentrations	Sampling year	Ref.
Across China	Urban and background areas	18 sites	PUF disk-Passive air sampler	FTOHs, FTAs, FOSAs, FOSEs	∑FTOHs: 51.4-936 (253±216) pg m^{-3}; ∑FTAs: 0.20-5.80 (1.64±1.56) pg m^{-3}; ∑FOSAs: 3.48-23.1 (12.8±4.95) pg m^{-3}; ∑FOSEs: 7.44-94.0 (40.0±18.9) pg m^{-3}	2009	83
Shenzhen	Urban area	13 sites	PUF disk-Passive air sampler	11 PFCs	∑PFC: 3.4-34 pg m^{-3}, mean 15 pg m^{-3}.	2011	84

Table S5. Overall concentrations of airborne OCPs reported in China over the past one and a half decades.

Location	Locale attribute	Number of sample	Sampling technology	Targets	Concentrations	Sampling year	Ref.
Across China	Urban and rural areas	32	PUF disk-Passive air sampler	7 OCPs	HCB: 10.4-462 pg m^{-3}; Individual DDTs: 1.2-472 pg m^{-3}; Chlordane: 1.14-159 pg m^{-3}	2004	37
Across China	Urban and background areas	37 cities, 174 samples	PUF disk-Passive air sampler	11 OCPs	HCHs: 0-16175 pg d^{-1}; DDTs: 0-11042 pg d^{-1}; HCB: 48.4-6510 pg d^{-1}; Chlordanes: 0-11928 pg d^{-1}; Endosulfans: 0-1293 pg d^{-1}	2005	97
Beijing	Urban area	27	PUF disk-Passive air sampler	11 OCPs	∑HCH: 91-397 pg m^{-3}; ∑DDT: 33-269 pg m^{-3};	2006-2007	44

					HCB: 15-160 pg m^{-3}		
Beijing	Urban area	33	High-volume air sampler	13 OCPs	HCBs: 27-1400 pg m^{-3}; ∑HCH : <LOD-2000 pg m^{-3}; ∑DDT: <LOD-850 pg m^{-3};	2005-2009	99
Beijing	Urban area	21	High-volume air sampler	HCB	47.3-1470 pg m^{-3}, mean 264 pg m^{-3}	2007-2009	100
Qingdao	Urban area	9	High-volume air sampler	11 OCPs	∑HCHs: <200-742 pg m^{-3}; 314 pg m^{-3} ∑DDTs: 88-263 pg m^{-3}; 164 pg m^{-3} ∑drins: <23-408 pg m^{-3}; 48 pg m^{-3} Chlordanes: <13-71 pg m^{-3}; 32 pg m^{-3} Mirex: 6.6-255 pg m^{-3}; 79 pg m^{-3}	2003	46
Qingdao	Urban area	52	Large volume TSP sampler	8 OCPs	∑HCHs: 12.5-110 pg m^{-3}, mean 32.4 pg m^{-3} ∑DDTs: 15.9-106 pg m^{-3}, mean 59.4 pg m^{-3} ∑OCPs:28.3-204 pg m^{-3}, mean 103 pg m^{-3}	2009-2010	45
The Yellow River region	Urban area	8	High-volume air sampler	11 OCPs	HCB: 18-140 pg m^{-3}; $\sum_4$HCHs: 29-160 pg m^{-3}; $\sum_6$DDTs: 20-140 pg m^{-3}	2012	52
Suzhou, Wuxi and Nantong	Urban area	21	High-volume air sampler	13 OCPs	HCB: 10.0-778 pg m^{-3}, mean 180 pg m^{-3}; Regional mean HCHs: 34.7-41.7 pg m^{-3}; DDTs:83.1-229 pg m^{-3}; CDs: 31.7-63.4 pg m^{-3}	2009-2010	41
Across the YRD	Urban and rural areas	31	PUF disk-Passive air sampler	23 OCPs	HCB: 151 pg m^{-3}, ∑DDTs: 168 pg m^{-3}, ∑HCHs: 18.8 pg m^{-3}, ∑chlordane: 110 pg m^{-3}, mirex: 17.9 pg m^{-3}	2010-2011	42
Taihu Lake	Rural area	21	High-volume air sampler	9 OCPs	α- and β-HCH: 21-164 pg m^{-3} and 18-96 pg m^{-3}; DDT isomers: n.d.-2753 pg m^{-3}; α-endosulfan: n.d.-888 pg	2002	101

					m^{-3}; HEPT: 18-173 pg m^{-3}; HCB: 18-109 pg m^{-3}		
Guangzhou, Hong Kong	Urban and suburban areas	90 paired samples	High-volume air sampler	8 OCPs	Individuals: 103-1440 pg m^{-3}	2003-2004	102
Guangzhou	Urban area	52	Large volume TSP sampler	OCPs	Monthly mean range:241-488 pg m^{-3}; annual mean: 346 pg m^{-3}	2006-2007	40
Guangzhou	Suburban area	20	High-volume air sampler	11 OCPs	∑HCHs: 40.5-235 pg m^{-3} ∑DDTs: 39.1-939 pg m^{-3}	2012	103
the Mt. Everest region	Remote area	6 paired samples	High-volume air sampler	9 OCPs	HCB: 4.8–12.6 pg m^{-3}; α-HCH: 8.7-25.9 pg m^{-3}; heptachlor: 3.3-22.2 pg m^{-3}; α-endosulfan: 8.8-71.1 pg m^{-3}	2002	104
Lhasa Region	Remote area	19	High-volume air sampler	9 OCPs	α and γ-HCH: n.d.-20.9 pg m^{-3}; DDT isomers: n.d.-34.3 pg m^{-3}; endosulfan: n.d.-22.6 pg m^{-3}	2006-2007	108
Tibetan plateau	Remote area	15	High-volume air sampler	13 OCPs	HCB: 6.36-28.8 pg m^{-3}; HCH isomers: 0.90-94.2 pg m^{-3}; DDT isomers: n.d.-19.7 pg m^{-3}; chlordane: n.d.-0.22 pg m^{-3}	2006-2008	105
Tibetan Plateau	Remote area	16 locations	XAD-2-Passive air sampler	13 OCPs	DDTs: 5-75 pg m^{-3}; HCHs: 0.1-36 pg m^{-3}; α-endosulfan: 0.1-10 pg m^{-3}; HCB: 2.8-80 pg m^{-3};	2007-2008	51
Southeastern Tibetan Plateau	Remote area	115	PUF disk-Passive air sampler	9 OCPs	DDTs: 9.2–57.4 pg m^{-3}; HCB: mean 12.4 pg m^{-3}; α and γ-HCH: mean 4.9 and 1.5 pg m^{-3}; DDT isomers: mean 1.9-12.0 pg m^{-3}	2008-2011	106
Southeastern Tibetan Plateau	Remote area	36	XAD-2-Passive air sampler	28 OCPs	Endosulfan I: mean 78.0 pg m^{-3}; ∑DDTs: mean 15.2 pg m^{-3}; ∑HCHs: mean 21.2 pg m^{-3}.	2010-2011	107

Table S6. Overall concentrations of airborne PAHs reported in China over the past one and a half decades.

Location	Locale attribute	Number of sample	Sampling technology	Targets	Concentrations	Sampling year	Ref.
Across north China	Urban and background areas	88	PUF disk-Passive air sampler	15 PAHs	Mean 220 ± 14 ng m^{-3}; Shanxi: 271 ± 43 ng m^{-3}; Shandong: 212 ± 19 ng m^{-3}; Hebei: 192±17 ng m^{-3}; Beijing-Tianjin area: 148±28 ng m^{-3}	2011	[109]
Beijing	Urban area	40 paired samples	High-volume air sampler	16 PAHs	20-479 ng m^{-3}, mean 119±105 ng m^{-3}	2008	[110]
Beijing	Urban area	63	High-volume air sampler	44 PAHs; 25 NPAHs; 5 OPAHs	$\sum PAH_{16\text{-US Priority}}$:4.1-45.5 ng m^{-3}; $\sum PAH_{28\ (MW<302)}$: 4.9-51.8 ng m^{-3}; $\sum PAH_{16\ (MW=302)}$: 1.4-9.4 ng m^{-3}; $\sum_{11}$NPAHs: 11.4-314 ng m^{-3}; $\sum_{5}$OPAHs: 205-2198 ng m^{-3}	2008	[113]
Beijing	Urban area	n.a.	High-volume air sampler	23 PAHs, 15 NPAHs, 16 OHPAHs, 7 OPAHs	PAHs: median 53.8 ng m^{-3}; NPAHs: 1.14 ng m^{-3}; OHPAHs: 1.40 ng m^{-3}; OPAHs: 3.62 ng m^{-3}	2012-2013	[114]
Lake Small Baiyangdian	Rural area	/	Passive sampler	16 PAHs	104-1250 ng m^{-3}, mean 549±392 ng m^{-3}	2007-2008	[112]
Yucheng, Shandong	Urban area	46	Medium-volume $PM_{2.5}$ sampler	12 PAHs	15.1-45.5 ng m^{-3}, mean 27.4±7.6 ng m^{-3}	2013	[115]
Shanghai	Industrial area	18	PM_{10} sampler	16 PAHs	0.07-270 ng m^{-3}, mean 64.9 ng m^{-3}	2004-2005	[116]
Shanghai	Urban tunnel	56 paired	Medium-volume	16 PAHs	3100-11307 ng m^{-3}	2011-2012	[118]

		samples	air sampler				
Shanghai	Urban tunnel	96	Medium-volume air sampler	16 PAHs	Individuals: >0.1 ng m^{-3} but <3000 ng m^{-3}	2011-2012	141
Shanghai	Urban and suburban sites	230	High-volume aerosol sampler	16 PAHs	Annual mean 6.9 ng m^{-3} in $PM_{2.5}$	2014-2015	119
Shanghai	Suburban area	10 paired samples	High-volume air sampler	37 PAHs	4.58-14.5 ng m^{-3} in TSP; 1.82-8.56 ng m^{-3} in $PM_{1.1}$	2015	117
Suzhou, Wuxi and Nantong	Urban area	21	High-volume air sampler	16 PAHs	13.9- 229 ng m^{-3}, mean 88.2 ng m^{-3}	2009-2010	41
Guangzhou	Urban area	9	High-volume air sampler	37 PAHs; 24 *n*-alkanes PAHs	$\sum_{37}$PAHs: 134-299 ng m^{-3} *n*-alkanes PAHs: 150-1458 ng m^{-3}	2001	122
Guangzhou	Urban and suburban area	99	High-volume air sampler	16 PAHs	mean 130±73.1 ng m^{-3} in the urban site; mean 120.4±48.5 ng m^{-3} in the suburban site	2005-2006	123
Guangzhou	industrial complex site and e-waste recycling site	80	High-volume air sampler	17 PAHs; 12 NPAHs, 6 OPAHs	PAHs: 7.38-113 ng m^{-3} in $PM_{2.5}$; NPAHs: 40.9-645 ng m^{-3} in $PM_{2.5}$; OPAHs: 519-1246 ng m^{-3} in $PM_{2.5}$	2009-2010	121
Guangzhou	Suburban area	32 paired samples	High-volume air sampler	18 PAHs; 29 NPAHs; 6 OPAHs	PAHs: mean 91.5±36.1 ng m^{-3}; NPAHs: mean 4.14±2.37 ng m^{-3}; OPAHs: 13.0±6.63 ng m^{-3}	2010	124
Guangzhou	Urban area	36	TSP air sampler	17 PAHs	6.99-106 ng m^{-3}, mean 33.9 ng m^{-3} in $PM_{2.5}$	2012-2013	120
Guangzhou	Suburban area	20	High-volume air sampler	12 PAHs	40.9-333 ng m^{-3}	2012	103
Shanxi Province	Coking plants	8	High-volume air sampler	16 PAHs;	1159-2241 ng m^{-3}	2009	125
Chengdu	Urban area	96 paired	Medium-volume	16 PAHs;	41.5 ng m^{-3} in PM_{10}; 36.8 ng m^{-3} in $PM_{2.5}$	2011-2012	126

		samples	air sampler				
Xi'an	Urban area	19 sites, 266 samples	$PM_{2.5}$ mini-volume sampler	25 PAHs; 3 OPAHs	$\sum_{25}$PAHs: 23.5- 574 ng m^{-3}, mean 197 ng m^{-3}; OPAHs: 3.2-73.2 ng m^{-3}, mean 29.4 ng m^{-3}	2013	[127]
Tibetan plateau	Remote area	15	High-volume air sampler	16 PAHs	112-2228 pg m^{-3}	2006-2008	[105]