

Supporting information

Determination of Eight Benzene Homologues in Airport Ambient Air and Aircraft Cabin Air by Two-Stage Thermal Desorption-Gas Chromatography

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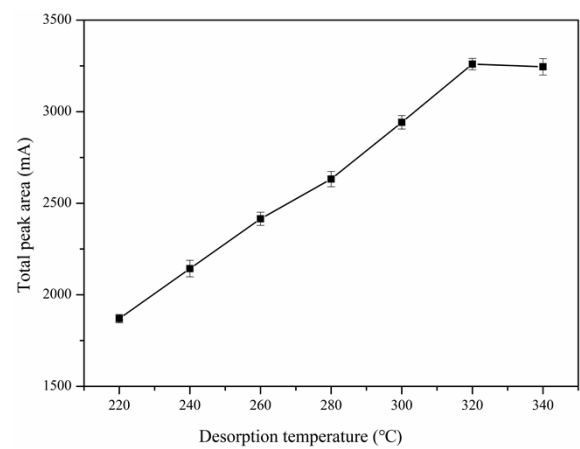


Figure S1 Relationship diagram between desorption temperature and total peak area

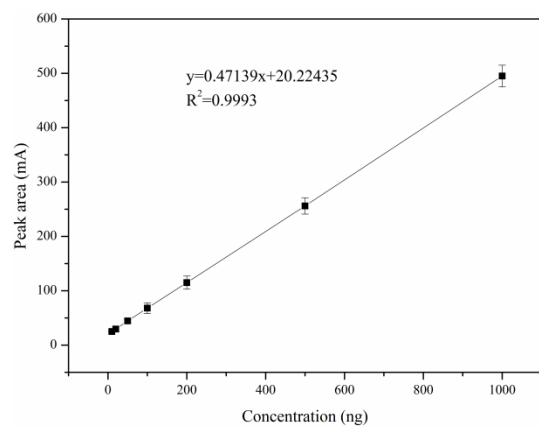


Figure S2 Calibration curve of benzene

Table S1 The average and total concentrations of eight benzene homologues in the transport airport ambient air in June 2024 (µg/m³)

Compound	Runway area									Terminal building area									Apron area						Auxiliary area					
	Morning			Noon			Evening			Morning			Noon			Evening			Morning		Noon		Evening		Morning		Noon		Evening	
	50m	200m	500m	50m	200m	500m	50m	200m	500m	De	Sc	Wl	De	Sc	Wl	De	Sc	Wl	Ca	Pa	Ca	Pa	Ca	Pa	Fsz	Mh	Fsz	Mh	Fsz	Mh
Benzene	11.2	5.0	3.8	6.1	3.1	2.1	14	7.8	5.1	2.2	0.4	1.7	1.3	0.4	0.9	2.9	0.6	1.8	1.1	0.9	0.7	0.3	1.3	1.1	3.5	3.6	3.5	3.7	3.6	3.9
Toluene	8.8	3.7	3.8	7.5	3.3	3.5	8.2	4.7	4.8	2.6	0.5	0.9	2.1	0.5	0.7	2.9	0.6	1.0	0.9	0.4	0.5	-	0.9	0.4	2.9	3.7	2.1	1.9	3.6	3.7
Ethylbenzene	7.4	2.9	8.0	6.1	2.8	2.5	7.9	3.5	3.1	1.8	0.4	0.6	1.6	0.3	0.4	2.2	0.4	0.7	1.1	0.6	1.1	0.6	1.2	0.7	1.3	3.3	1.2	2.1	1.6	3.8
P-xylene	5.4	2.3	3.2	5.3	2.6	2.1	5.7	3.0	2.3	1.6	-	0.2	1.4	-	-	1.8	-	0.2	1.1	0.5	0.9	0.6	1.2	0.5	0.6	1.2	0.6	0.5	0.9	1.5
M-xylene	5.2	1.4	-	4.6	1.2	-	5.4	1.8	-	1.4	-	-	1.3	-	-	1.8	-	-	1.0	0.4	1.1	0.3	1.3	0.4	0.4	0.9	0.2	0.4	0.7	1.2
O-xylene	0.7	-	-	0.4	-	-	1.1	-	-	1.1	-	-	1.0	-	-	1.1	-	-	3.1	0.5	0.8	0.4	1.2	0.6	0.4	1.1	-	0.3	0.4	1.0
Styrene	4.4	2.7	1.5	3.4	1.6	1.1	5.5	3.1	2.1	1.0	0.3	0.4	0.8	0.2	0.2	1.3	0.3	0.3	0.8	0.7	1.2	0.6	1.6	0.8	0.2	0.3	-	-	0.2	0.3
P-tert-butyltoluene	3.3	1.6	0.8	1.9	0.9	0.3	3.5	1.7	0.4	0.7	0.2	0.3	0.4	0.2	0.2	0.7	0.2	0.5	1.1	0.7	0.8	0.4	1.4	0.7	-	-	-	-	-	-
Σeightbenzene homologues	46.4	19.6	21.1	35.3	15.5	11.6	51.3	25.6	17.8	12.4	1.8	4.1	9.9	1.6	2.4	14.7	2.1	4.5	10.2	4.7	7.1	3.2	10.1	5.2	12.9	14.1	7.6	8.9	11	15.4

-: not detected

Table S2 The average and total concentrations of eight benzene homologues in the general aviation airport ambient air in June 2024 (µg/m³)

Compound	Runway area									Terminal building area									Apron area						Auxiliary area					
	Morning			Noon			Evening			Morning			Noon			Evening			Morning		Noon		Evening		Morning		Noon		Evening	
	50m	200m	500m	50m	200m	500m	50m	200m	500m	De	Sc	Wl	De	Sc	Wl	De	Sc	Wl	Ca	Pa	Ca	Pa	Ca	Pa	Fsz	Mh	Fsz	Mh	Fsz	Mh
Benzene	2.2	1.0	0.5	1.0	0.4	0.2	2.6	1.3	0.7	0.4	0.2	0.2	0.4	-	0.2	0.6	0.2	0.2	0.6	0.5	0.4	0.3	0.7	0.5	0.8	0.5	0.7	0.4	0.9	0.7
Toluene	1.7	0.7	0.5	0.9	0.4	0.3	1.8	0.9	0.8	0.5	-	0.2	0.3	-	-	0.6	0.2	0.2	0.4	0.2	0.4	-	0.5	0.3	1.0	0.7	0.9	0.5	1.3	0.6
Ethylbenzene	1.4	0.7	0.3	0.6	0.2	0.1	1.6	0.9	0.4	0.4	0.3	0.1	0.3	-	-	0.5	0.1	0.2	0.7	0.4	0.5	0.3	0.7	0.5	0.2	0.7	-	0.7	0.2	1.0
P-xylene	1.1	0.4	0.1	0.4	0.1	-	0.9	0.5	0.3	0.2	-	-	0.2	-	-	0.3	-	0.1	0.5	1.0	0.5	0.2	0.5	0.6	-	0.2	-	-	-	0.2
M-xylene	1.0	0.2	-	0.3	0.2	-	1.3	0.3	-	0.2	0.1	-	0.1	-	-	0.2	0.1	-	0.6	0.4	0.6	0.2	0.6	0.4	-	-	-	-	0.1	0.1
O-xylene	0.2	0.1	-	-	-	-	0.4	0.1	-	0.2	-	-	0.1	-	-	0.2	-	0.1	0.6	0.4	0.4	0.2	0.7	0.3	-	0.1	-	-	-	-
Styrene	0.7	0.4	0.2	0.3	-	-	1.2	0.8	0.5	0.2	-	0.3	-	0.2	-	0.2	0.1	0.2	0.7	0.4	0.6	0.3	0.7	0.7	-	-	-	-	-	0.1
P-tert-butyltoluene	0.5	0.2	-	0.2	-	-	0.8	0.4	0.3	0.1	-	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.7	0.4	0.4	0.2	0.6	0.6	0.8	-	0.6	-	1.1	0.1
Σeightbenzene homologues	8.8	3.7	1.6	3.7	1.3	0.6	10.6	5.2	3.0	2.2	0.6	0.9	1.5	0.3	0.3	2.7	0.9	1.0	4.8	3.7	3.8	1.7	5.0	3.9	2.8	2.2	2.2	1.6	3.6	2.8

-: not detected