

Supplemental Material Captions

Fig. 1S.

Sampling system of VOCs

Table 1S

VOCs species within PAMS and their method detection limits ($\mu\text{g m}^{-3}$)

Table 2S

SO₂ EFs for each pharmaceutical factory

Table 3S

NO_x EFs for each pharmaceutical factory

Table 4S

PM EFs for each pharmaceutical factory

Table 5S

VOCs EFs for each pharmaceutical factory

Table 6S

SO₂ EFs for each food factory

Table 7S

NO_x EFs for each food factory

Table 8S

PM EFs for each food factory

Table 9S

VOCs EFs for each food factory

Table 10S

SO₂ EFs for each brick factory

Table 11S

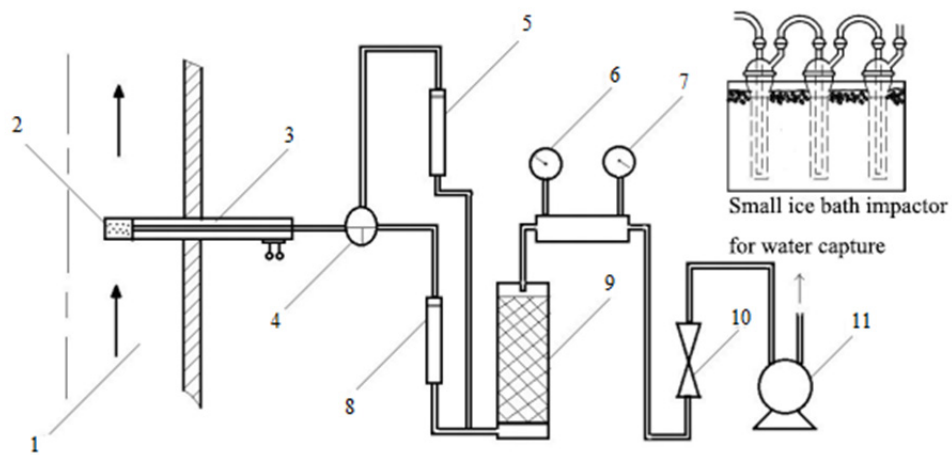
NO_x EFs for each brick factory

Table 12S

PM EFs for each brick factory

Table 13S

VOCs EFs for each brick factory



1-Exhaust pipe, 2-Glass wool filter, 3-Sampling gun, 4-Triple valve, 5-Bypass adsorption tube, 6-Thermometer, 7-Pressure gauge, 8-Adsorption tube, 9-Dryer, 10-Flowmeter, 11-Pump.

Fig. 1S. Sampling system of VOCs

Table 1S. VOCs species within PAMS and their method detection limits ($\mu\text{g m}^{-3}$)

Molecular Formula	Cas No.	Mole Weight	Detection Limit	Molecular Formula	Cas No.	Mole Weight	Detection Limit
C ₂ H ₂	74-86-2	26	0.3	C ₇ H ₁₆	591-76-4	100	0.5
C ₂ H ₄	74-85-1	28	0.4	C ₇ H ₁₆	565-59-3	100	0.6
C ₂ H ₆	74-84-0	30	0.4	C ₇ H ₁₆	589-34-4	100	0.7
C ₃ H ₆	115-07-1	42	0.2	C ₈ H ₁₈	540-84-1	114	0.7
C ₃ H ₈	74-98-6	44	0.4	C ₇ H ₁₆	142-82-5	100	0.5
C ₄ H ₁₀	75-28-5	58	0.3	C ₇ H ₁₄	108-87-2	98	0.7
C ₄ H ₈	106-98-9	56	0.2	C ₈ H ₁₈	565-75-3	114	0.8
C ₄ H ₁₀	106-97-8	58	0.4	C ₇ H ₈	108-88-3	92	0.2
C ₄ H ₈	107-01-7	56	0.3	C ₈ H ₁₈	592-27-8	114	0.7
C ₄ H ₈	590-18-1	56	0.2	C ₈ H ₁₈	589-81-1	114	0.4
C ₅ H ₁₂	78-78-4	72	0.4	C ₈ H ₁₈	111-65-9	114	0.5
C ₅ H ₁₀	109-67-1	70	0.2	C ₈ H ₁₀	100-41-4	106	0.3
C ₅ H ₁₂	109-66-0	72	0.5	C ₈ H ₁₀	108-38-3	106	0.6
C ₅ H ₈	78-79-5	68	0.3	C ₈ H ₁₀	106-42-3	106	0.6
C ₅ H ₁₀	646-04-8	70	0.5	C ₈ H ₁₀	95-47-6	106	0.3
C ₅ H ₁₀	627-20-3	70	0.3	C ₈ H ₈	100-42-5	104	0.5
C ₆ H ₁₄	75-83-2	86	0.1	C ₉ H ₂₀	111-84-2	128	0.3
C ₅ H ₁₀	287-92-3	70	0.3	C ₉ H ₁₂	68936-98-1	120	0.3
C ₆ H ₁₄	79-29-8	86	0.2	C ₉ H ₁₂	103-65-1	120	0.5
C ₆ H ₁₄	107-83-5	86	0.5	C ₉ H ₁₂	95-63-6	120	0.5
C ₆ H ₁₄	96-14-0	86	0.3	C ₉ H ₁₂	526-73-8	120	0.5
C ₆ H ₁₂	763-29-1	84	0.4	C ₉ H ₁₂	611-14-3	120	0.6
C ₆ H ₁₄	92112-69-1	86	0.5	C ₉ H ₁₂	620-14-4	120	0.4
C ₆ H ₁₂	96-37-7	84	0.4	C ₉ H ₁₂	622-96-8	120	0.4
C ₇ H ₁₆	108-08-7	700	0.3	C ₁₀ H ₁₄	141-93-5	134	0.4
C ₆ H ₆	71-43-2	78	0.6	C ₁₀ H ₁₄	105-05-5	134	0.7
C ₆ H ₁₂	110-82-7	84	0.4	C ₉ H ₁₂	108-67-8	120	0.3
C ₃ H ₆ O	67-64-1	58	1	C ₁₀ H ₂₂	124-18-5	142	0.4
C ₂ H ₄ O	75-07-0	44	0.9	C ₁₁ H ₂₄	1120-21-4	156	0.7
CH ₂ O	8013-13-6	30	0.8				

Table 2S SO₂ EFs for each pharmaceutical factory

SO ₂	EF _I (kg t ⁻¹)	EF _{II} (kg MY ⁻¹)	EF _{III} (kg t ⁻¹)
P1	11.2	74.7	22.4
P2	3.00	16.1	125
P3	7.22	231	221
P4	1.91	86.3	39.2
P5	6.67	192	286
P6	7.20	216	180
P7	7.20	216	96.0
P8	2.51	5.01	1118

Table 3S NO_x EFs for each pharmaceutical factory

NO _x	EF _I (kg t ⁻¹)	EF _{II} (kg MY ⁻¹)	EF _{III} (kg t ⁻¹)
P1	4.18	27.8	8.35
P2	1.86	9.96	77.4
P3	2.94	93.8	90.0
P4	1.38	62.2	28.3
P5	2.67	76.9	114
P6	2.93	88.0	73.3
P7	2.94	88.2	39.2
P8	2.82	5.63	1256

Table 4S PM EFs for each pharmaceutical factory

PM	EF _I (kg t ⁻¹)	EF _{II} (kg MY ⁻¹)	EF _{III} (kg t ⁻¹)
P1	7.50	50.0	15.0
P2	0.26	1.40	10.9
P3	4.89	156	150
P4	1.20	54.4	24.7
P5	3.47	100	149
P6	4.90	147	123
P7	6.38	191	85.0
P8	2.38	4.75	1059

Table 5S VOCs EFs for each pharmaceutical factory

VOCs	EF _I (kg t ⁻¹)	EF _{II} (kg MY ⁻¹)	EF _{III} (kg t ⁻¹)
P1	0.18	0.90	0.36
P2	22.9	2.39	951
P3	0.39	21.9	11.9
P4	0.39	25.2	8.03
P5	0.40	41.5	17.1
P6	15.3	30.0	383
P7	0.39	22.9	5.17
P8	0.27	0.88	122

Table 6S SO₂ EFs for each food factory

SO ₂	EF _I (kg t ⁻¹)	EF _{II} (kg MY ⁻¹)	EF _{III} (kg t ⁻¹)
F1	5.60	94.4	3.80
F2	7.17	287	2.69
F3	10.5	696	3.97
F4	15.7	25.4	0.65
F5	16.0	995	2.21
F6	7.98	2111	1.14
F7	9.60	43.6	4.73
F8	3.57	5.39	0.02
F9	7.65	64.7	0.17

Table 7S NO_x EFs for each food factory

NO _x	EF _I (kg t ⁻¹)	EF _{II} (kg MY ⁻¹)	EF _{III} (kg t ⁻¹)
F1	2.95	49.8	2.00
F2	2.92	117	1.09
F3	2.58	171	0.97
F4	2.94	4.75	0.12
F5	2.94	183	0.41
F6	2.94	777	0.42
F7	2.94	13.4	1.45
F8	2.94	4.44	0.01
F9	4.72	39.9	0.10

Table 8S PM EFs for each food factory

PM	EF _I (kg t ⁻¹)	EF _{II} (kg MY ⁻¹)	EF _{III} (kg t ⁻¹)
F1	6.79	115	4.61
F2	4.83	193	1.81
F3	2.98	197	1.12
F4	6.08	9.83	0.25
F5	3.20	199	0.44
F6	2.56	678	0.37
F7	8.74	39.7	4.30
F8	8.34	12.6	0.04
F9	1.53	13.0	0.03

Table 9S VOCs EFs for each food factory

VOCs	EF _I (kg t ⁻¹)	EF _{II} (kg MY ⁻¹)	EF _{III} (kg t ⁻¹)
F1	37.0	624	25.1
F2	3.08	123	1.16
F3	0.39	25.8	0.15
F4	0.18	0.29	0.01
F5	0.18	11.0	0.02
F6	0.18	47.6	0.03
F7	0.39	1.77	0.19
F8	1.90	2.87	0.01
F9	0.18	1.52	0.01

Table 10S SO₂ EFs for each brick factory

SO ₂	EF _I (kg t ⁻¹)	EF _{II} (t MY ⁻¹)	EF _{III} (kg t ⁻¹)
B1	7.32	400	11.7
B2	16.7	146	11.7
B3	20.9	1489	11.7
B4	7.30	292	11.7
B5	9.22	146	11.7
B6	16.7	195	11.7
B7	4.80	1.54	0.09
B8	14.6	117	11.7
B9	0.65	0.68	0.17
B10	1.23	2.87	1.62
B11	2.98	2.82	1.95
B12	0.98	1.35	0.35
B13	2.97	4.29	1.60
B14	2.98	0.69	0.20
B15	0.76	1.13	0.48
B16	4.18	6.13	2.30
B17	4.54	4.59	1.21
B18	4.18	6.57	2.30
B19	21.5	203	15.7
B20	1.28	6.48	0.52
B21	0.85	4.95	0.59
B22	2.02	31.9	1.70
B23	4.55	39.3	1.70
B24	35.0	49.2	20.0
B25	5.04	5.14	20.0
B26	15.9	27.7	17.0
B27	4.25	8.50	1.70
B28	2.51	5.02	1.70
B29	4.25	10.3	1.70
B30	4.25	10.5	1.70
B31	4.15	9.62	1.70
B32	5.17	10.3	2.48
B33	5.88	12.5	2.09
B34	4.15	9.67	2.09

Table 11S NO_x EFs for each brick factory

NO _x	EF _I (kg t ⁻¹)	EF _{II} (t MY ⁻¹)	EF _{III} (kg t ⁻¹)
B1	0.17	9.41	0.27
B2	0.39	3.43	0.27
B3	0.49	3.51	0.27
B4	0.17	6.87	0.27
B5	0.22	3.44	0.27
B6	0.39	4.58	0.28
B7	2.94	0.94	0.05
B8	0.34	2.75	0.27
B9	1.59	1.66	0.43
B10	0.18	0.42	0.24
B11	0.91	0.86	0.59
B12	2.01	2.78	0.72
B13	1.44	2.09	0.78
B14	2.43	0.56	0.16
B15	0.95	1.41	0.60
B16	0.90	1.33	0.50
B17	2.92	2.95	0.78
B18	0.96	1.51	0.53
B19	0.19	1.77	0.14
B20	1.09	5.54	0.44
B21	0.09	0.55	0.07
B22	0.08	1.24	0.07
B23	0.18	1.53	0.07
B24	1.30	1.83	0.74
B25	1.21	1.24	4.82
B26	0.62	1.08	0.66
B27	2.78	5.56	1.11
B28	1.64	3.28	1.11
B29	0.33	0.79	0.13
B30	0.33	0.81	0.13
B31	2.72	6.29	1.11
B32	1.46	2.92	0.70
B33	2.19	4.67	0.78
B34	1.54	3.60	0.78

Table 12S PM EFs for each brick factory

PM	EF _I (kg t ⁻¹)	EF _{II} (t MY ⁻¹)	EF _{III} (kg t ⁻¹)
B1	0.03	1.51	0.04
B2	0.06	0.55	0.04
B3	0.08	0.56	0.04
B4	0.03	1.10	0.04
B5	0.03	0.55	0.04
B6	0.06	0.73	0.04
B7	6.27	2.01	0.11
B8	0.06	0.44	0.04
B9	0.90	0.93	0.24
B10	0.19	0.43	0.25
B11	0.83	0.79	0.55
B12	0.61	0.84	0.22
B13	1.16	1.67	0.62
B14	2.00	0.46	0.13
B15	1.51	2.26	0.96
B16	0.06	0.09	0.03
B17	1.42	1.44	0.38
B18	0.06	0.09	0.03
B19	0.06	0.00	0.04
B20	0.64	3.24	0.26
B21	0.07	0.41	0.05
B22	0.11	1.75	0.09
B23	0.32	2.80	0.12
B24	0.25	0.34	0.14
B25	0.12	0.12	0.48
B26	1.10	1.91	1.17
B27	0.08	0.16	0.03
B28	0.05	0.09	0.03
B29	0.08	0.18	0.03
B30	0.08	0.19	0.03
B31	0.07	0.17	0.03
B32	0.20	0.41	0.10
B33	0.10	0.22	0.04
B34	0.08	0.18	0.04

Table 13S VOCs EFs for each brick factory

VOCs	EF _I (kg t ⁻¹)	EF _{II} (t MY ⁻¹)	EF _{III} (kg t ⁻¹)
B1	0.08	4.52	0.13
B2	0.19	1.65	0.13
B3	0.24	1.68	0.13
B4	0.08	3.30	0.13
B5	0.10	1.65	0.13
B6	0.19	2.20	0.13
B7	0.18	0.06	0.01
B8	0.17	1.32	0.13
B9	2.13	2.22	0.57
B10	0.27	0.63	0.35
B11	0.56	0.53	0.36
B12	0.56	0.77	0.20
B13	1.19	1.71	0.64
B14	5.33	1.23	0.36
B15	0.47	0.71	0.30
B16	0.59	0.87	0.33
B17	0.20	0.20	0.05
B18	0.68	1.07	0.38
B19	0.16	1.49	0.11
B20	0.13	0.67	0.05
B21	0.16	0.96	0.11
B22	0.02	0.28	0.01
B23	0.20	1.69	0.07
B24	0.20	0.28	0.11
B25	0.69	0.71	2.75
B26	0.25	0.43	0.26
B27	0.36	0.72	0.14
B28	0.36	0.72	0.25
B29	0.36	0.88	0.14
B30	0.36	0.89	0.14
B31	0.36	0.84	0.15
B32	0.31	0.61	0.15
B33	0.42	0.89	0.15
B34	0.29	0.68	0.15