



Communication

Volatile organic compound (VOC) contamination in hotel rooms: A pilot study to understand sources and health risks

Supplementary Materials

Table S1. Condition of thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) analysis of volatile organic compounds (VOCs).

Parameters	Conditions
<u>TD</u>	
Instrument	TD UltraA Autosampler coupled with Unity2 (Markes International)
Focusing trap	“Air Toxics Trap” (Part# U-T15ATA-2S)
Tube desorption	260°C (5min) with 50mL/min tube flow (split flow: 20mL/min)
Trap desorption	25°C to 280°C (3min) at a maximum heating rate with 20mL/min trap flow
Outlet split-flow	8mL/min
Flow path	140°C
<u>GC</u>	
Column	HP-5ms Ultra Inert (30m×250µm×0.25µm, Agilent Technology)
Carrier gas	Helium (Ultra High Purity 5.0 Grade, Part# HE UHP300, Airgas Inc.)
Colum flow	1.2 mL/min, Constant Flow
<u>GC oven ramp</u>	
Initial temperature	35 °C, hold 3min
Final temperature	300 °C; start at 15 °C/min to 95 °C (hold 2min), then 15 °C/min to 140 °C, then 35°C/min to 220 °C, and then 40°C/min to 300 °C (hold 4min).
Total Run Time	20min
<u>MS</u>	
Aux heater	280 °C
Ion source	230 °C
Electron energy	70 volts
Ionization mode	Electron ionization (EI)
Mass Range	Scan Mode, 35-350 amu

Table S2. Performance of TD-GC/MS analysis of target VOCs.

#	Target VOCs	CAS	RT (min)	MDLs (ng)	MDL-3d (µg/m ³)
1	1,1-Dichloroethylene	75-35-4	1.879	0.037	0.015
2	Acrylonitrile	107-13-1	1.907	0.055	0.019
3	Dichloromethane	75-09-2	1.943	0.172	0.088
4	Carbon Disulfide	75-15-0	1.958	0.271	0.096
5	trans-1,2-Dichloroethylene	107-13-1	2.074	0.055	0.019
6	Methyl Tert Butyl Ether	1634-04-4	2.100	0.052	0.043
7	1,1-Dichloroethane	75-34-3	2.157	0.018	0.007
8	Propionitrile	107-12-0	2.168	0.024	0.009
9	n-Hexane	114-54-3	2.284	0.090	0.045
10	Methacrylonitrile	126-98-7	2.314	0.043	0.017
11	cis-1,2-Dichloroethylene	156-59-2	2.370	0.020	0.008
12	Ethyl Acetate	141-78-6	2.374	0.059	0.030
13	Methyl Acrylate	96-33-3	2.430	0.038	0.020
14	2,2-dichloropropane	594-20-7	2.430	0.106	0.049
15	Bromochloromethane	74-97-5	2.449	0.005	0.003
16	Chloroform	67-66-3	2.456	0.026	0.013
17	Tetrahydrofuran	109-99-9	2.558	0.204	0.084
18	1,1,1-Trichloroethane	71-55-6	2.749	0.047	0.020
19	1,2-Dichloroethane	107-06-2	2.786	0.031	0.017
20	1,1-Dichloropropene	563-58-6	2.873	0.027	0.012
21	Benzene	71-43-2	2.940	0.059	0.033
22	Carbontetrachloride	56-23-5	2.951	0.030	0.015
23	1,2-Dichloropropane	78-87-5	3.742	0.040	0.019
24	n-Heptane	142-82-5	3.480	0.052	0.032
25	Trichloroethylene	79-01-6	3.491	0.029	0.014
26	Dibromomethane	74-95-3	3.517	0.033	0.014
27	Bromodichloromethane	75-27-4	3.600	0.025	0.011
28	2,5-Dimethylfuran	625-86-5	3.630	0.036	0.017
29	Methyl Methacrylate	80-62-6	3.716	0.030	0.016
30	trans-1,3-Dichloropropene	10061-02-6	4.170	0.026	0.012
31	cis-1,3-Dichloropropene	10061-01-5	4.601	0.030	0.014
32	Toluene	108-88-3	4.612	0.039	0.021
33	1,1,2-Trichloroethane	79-00-5	4.694	0.018	0.009
34	1,3-Dichloropropane	142-28-9	4.927	0.021	0.010
35	Ethyl methacrylate	97-63-2	4.976	0.081	0.043
36	Dibromochloromethane	124-48-1	5.077	0.023	0.011
37	n-Octane	111-65-9	5.167	0.117	0.075
38	1,2-Dibromoethane	106-93-4	5.260	0.027	0.022
39	Tetrachloroethylene	127-18-4	5.324	0.022	0.012

#	Target VOCs	CAS	RT (min)	MDLs (ng)	MDL-3d (µg/m³)
40	Chlorobenzene	108-90-7	5.916	0.045	0.022
41	1,1,1,2-Tetrachloroethane	630-20-6	5.980	0.025	0.013
42	Ethylbenzene	100-41-4	6.160	0.033	0.016
43	m,p-Xylene	108-38-3/106-42-3	6.284	0.079	0.043
44	Bromoform	75-25-2	6.505	0.056	0.027
45	Styrene	100-42-5	6.599	0.057	0.023
46	o-Xylene	95-47-6	6.632	0.048	0.027
47	n-Nonane	111-84-2	6.722	0.047	0.033
48	1,1,2,2-Tetrachloroethane	79-34-5	6.910	0.052	0.028
49	1,2,3-Trichloropropane	96-18-4	7.011	0.039	0.021
50	Isopropylbenzene	98-82-8	7.086	0.037	0.017
51	trans-1,4-Dichloro-2-butene	110-57-6	7.131	0.103	0.054
52	Bromobenzene	108-86-1	7.176	0.048	0.022
53	alpha-pinene	7785-70-8	7.232	0.030	0.017
54	2-Chlorotoluene	95-49-8	7.483	0.038	0.021
55	Propylbenzene	103-65-1	7.517	0.038	0.018
56	3-Ethylpyridine	536-78-7	7.232	0.630	0.332
57	4-Chlorotoluene	106-43-4	7.570	0.067	0.036
58	1,3,5-Trimethylbenzene	108-67-8	7.746	0.047	0.023
59	Pentachloroethane	76-01-7	7.869	0.058	0.033
60	Phenol	108-95-2	7.899	0.364	0.171
61	tert-Butylbenzene	98-06-6	8.158	0.028	0.017
62	1,2,4-Trimethylbenzene	95-63-6	8.169	0.038	0.018
63	n-Decane	124-18-5	8.244	0.034	0.023
64	1,4-Dichlorobenzene	106-46-7	8.387	0.021	0.009
65	sec-Butylbenzene	135-98-8	8.484	0.024	0.015
66	1,3-Dichlorobenzene	541-73-1	8.507	0.037	0.020
67	1,2,3-Trimethylbenzene	87-61-6	8.286	0.190	0.113
68	p-Isopropyltoluene	99-87-6	8.747	0.025	0.015
69	d-Limonene	5989-27-5	8.833	0.084	0.052
70	1,2-Dichlorobenzene	95-50-1	8.964	0.023	0.013
71	Butylbenzene	104-51-8	9.384	0.039	0.024
72	Hexachloroethane	67-72-1	9.733	0.047	0.029
73	1,2-Dibromo-3-chloropropane	96-12-8	9.894	0.026	0.015
74	Nitrobenzene	98-95-3	9.976	0.143	0.073
75	n-Undecane	1120-21-4	10.145	0.032	0.024
76	1,2,4-Trichlorobenzene	120-82-1	11.431	0.042	0.025
77	Naphthalene	91-20-3	11.532	0.052	0.025
78	n-Dodecane	112-40-3	11.674	0.041	0.032
79	1,2,3-Trichlorobenzene	87-61-6	11.933	0.034	0.020

#	Target VOCs	CAS	RT (min)	MDLs (ng)	MDL-3d (µg/m³)
80	Hexachlorobutadiene	87-68-3	11.978	0.035	0.024
81	n-Tridecane	629-50-5	12.799	0.068	0.050
82	Nicotine	54-11-5	13.159	10.00	1.097
83	n-Tetradecane	629-59-4	13.549	0.057	0.044
84	n-Pentadecane	629-62-9	14.118	0.095	0.088
85	Ethyl Alcohol	64-17-5	1.681	0.032	0.042
86	Isopropyl Alcohol	67-63-0	1.759	0.031	0.047
87	2-Butoxyethanol	111-76-2	6.750	0.311	0.256
88	Benzaldehyde	100-52-7	7.520	0.314	0.238
89	beta-Pinene	18172-67-3	7.810	0.407	0.399
90	alpha-Terpinene	99-86-5	8.490	0.137	0.130
91	2-Ethyl-1-hexanol	104-76-7	8.670	1.415	1.216
92	Benzyl alcohol	100-51-6	8.780	0.306	0.212
93	Salicylaldehyde	90-02-8	9.000	0.278	0.202
94	Terpinolene	586-62-9	9.890	0.227	0.206
95	Linalool	78-70-6	10.050	0.265	0.237
96	Camphor	76-22-2	10.850	0.117	0.099
97	Menthol	89-78-1	11.250	0.090	0.077
98	1-Fluoronaphthalene	321-38-0	11.440	0.324	0.228
99	Terpineol	98-55-5	11.510	0.297	0.244
100	Methyl salicylate	119-36-8	11.570	0.249	0.183
101	4-Allylanisole	140-67-0	11.610	0.359	0.287
102	Methyl-2-octynoate	111-12-6	11.620	0.311	0.248
103	Citronellol	106-22-9	11.960	0.160	0.131
104	Citronellol-Nerol-Geraniol	5392-40-5	11.960	0.084	0.068
105	(S)-(+)-Carvone	2244-16-8	12.210	0.208	0.159
106	trans-Cinnamaldehyde	14371-10-9	12.490	0.310	0.206
107	Anise alcohol	105-13-5	12.600	0.309	0.196
108	Hydroxycitronellal	107-75-5	12.620	0.110	0.087
109	Anethole	104-46-1	12.640	0.140	0.105
110	Safrole	94-59-7	12.690	0.254	0.193
111	Methyl 2-nonynoate	111-80-8	12.750	0.310	0.246
112	Cinnamyl alcohol	104-54-1	12.820	0.290	0.194
113	Dimethylbenzylcarbiny acetate (DMBCA)	151-05-3	12.940	0.135	0.109
114	Eugenol	97-53-0	13.240	0.149	0.108
115	alpha-Damascone	43052-87-5	13.390	0.150	0.123
116	beta-Damascone(E)	23726-91-2	13.450	0.026	0.021
117	Damascenone (Rose Ketone-4)	23696-85-7	13.510	0.101	0.083
118	Vanillin	121-33-5	13.540	0.309	0.187
119	Methyl eugenol	93-15-2	13.540	0.237	0.180

#	Target VOCs	CAS	RT (min)	MDLs (ng)	MDL-3d (µg/m ³)
120	beta-Caryophyllene	87-44-5	13.730	0.282	0.238
121	Coumarin	91-64-5	13.820	0.262	0.142
122	Isoeugenol	5932-68-3	13.850	0.299	0.207
123	alpha-Isomethylionone	127-51-5	14.040	0.396	0.320
124	Eugenyl acetate	93-28-7	14.230	0.060	0.046
125	Butylphenyl methylpropional	80-54-6	14.270	0.070	0.055
126	Amyl salicylate	2050-08-0	14.490	0.273	0.200
127	3-Propylidene phthalide	17369-59-4	14.510	0.182	0.123
128	Isoeugenyl acetate	93-29-8	14.640	0.311	0.229
129	alpha-Amylcinnamaldehyde	78605-96-6	14.800	0.145	0.110
130	alpha-Santalol	115-71-9	14.930	0.278	0.214
131	alpha-Amylcinnamyl alcohol	101-85-9	14.940	0.244	0.166
132	Farnesol	4602-84-0	15.050	0.313	0.256
133	beta-Santalol	77-42-9	15.100	0.222	0.166
134	alpha-Hexylcinnamaldehyde	101-86-0	15.180	0.311	0.231
135	Benzyl Benzoate	120-51-4	15.270	0.310	0.210
136	Galaxolide(1+2)	1222-05-5	15.590	1.538	1.196
137	Benzyl salicylate	118-58-1	15.640	0.265	0.184
138	Hexadecanolactone/Dihydroambrettolide	109-29-5	15.880	0.218	0.156
139	Benzyl cinnamate	103-41-3	16.320	0.315	0.195

Table S3. Spatial variation of VOC concentrations ($\mu\text{g}/\text{m}^3$) in two hotel rooms.

VOCs	Hotel 1 (Memphis)			Hotel 2 (Pittsburgh)		
	Area 1	Area 2	Per Diff (%)	Bathroom	Bedroom	Per Diff (%)
Alcohols	5,069	4,674	8	934	791	17
2-Butoxyethanol	119	126	5	7.26	6.50	11
2-Ethyl-1-hexanol	99.1	103	4	4.88	3.77	26
Benzyl alcohol	5.80	5.42	7	4.72	0.88	137
Ethyl alcohol	1,751	1,442	19	694	576	19
Isopropyl alcohol	3,094	2,998	3	223	203	9
Alkanes	269	266	1	7.18	6.95	3
n-Decane	1.33	1.48	10	0.59	0.32	59
n-Dodecane	2.49	2.49	0.2	1.44	1.36	6
n-Nonane	0.43	0.43	0.04	0.25	0.21	17
n-Octane	0.79	0.45	54	0.29	0.24	19
n-Pentadecane	69.7	69.2	1	0.46	0.87	60
n-Tetradecane	180	177	2	0.39	0.78	68
n-Tridecane	13.1	14.1	7	2.61	2.25	15
n-Undecane	0.83	0.88	6	1.15	0.92	22
Aromatics	37.0	37.2	0.5	4.73	4.16	13
1,2,3-Trimethylbenzene	0.43	0.41	5	0.26	0.24	11
1,2,4-Trichlorobenzene	0.05	0.04	23	n.a.	n.a.	n.a.
1,2,4-Trimethylbenzene	1.10	1.12	2	0.26	0.24	11
1,3,5-Trimethylbenzene	0.24	0.26	6	0.06	0.05	21
1,4-Dichlorobenzene	11.2	11.4	2	0.04	0.03	10
Benzene	3.87	3.56	8	0.55	0.57	3
Chlorobenzene	0.07	0.06	13	n.a.	n.a.	n.a.
Ethylbenzene	0.95	0.96	1	0.29	0.25	14
Isopropylbenzene	0.13	0.12	5	0.05	0.04	18
m,p-Xylene	3.43	3.49	2	0.96	0.83	15
Naphthalene	4.57	4.59	0.5	0.12	0.13	5
o-Xylene	1.43	1.43	0.3	0.37	0.31	18
p-Isopropyltoluene	2.21	2.28	3	0.46	0.33	32
Propylbenzene	0.27	0.28	2	0.10	0.08	21
Styrene	1.86	1.89	2	0.27	0.24	14
Toluene	5.25	5.35	2	0.95	0.84	12
Carbonyl & Ketones	34.9	33.4	21	3.02	4.33	36
alpha-Hexylcinnamaldehyde	0.35	0.40	15	0.00	0.00	n.a.
Benzaldehyde	28.6	26.2	9	3.02	4.33	36
Butylphenyl methylpropional	0.42	0.47	11	n.a.	n.a.	n.a.
Salicylaldehyde	1.25	1.34	7	n.a.	n.a.	n.a.
Damascenone (Rose Ketone-4)	2.14	2.48	15	n.a.	n.a.	n.a.
Ethers & Esters	24.2	27.3	12	3.07	2.91	6

VOCs	Hotel 1 (Memphis)			Hotel 2 (Pittsburgh)		
	Area 1	Area 2	Per Diff (%)	Bathroom	Bedroom	Per Diff (%)
Amyl salicylate	0.41	0.43	5	n.a.	n.a.	n.a.
Benzyl Benzoate	0.56	0.70	21	n.a.	n.a.	n.a.
Ethyl Acetate	8.15	9.56	16	1.28	1.16	10
Methyl salicylate	4.51	4.51	0.002	0.68	0.68	0.9
4-Allylanisole	1.61	1.69	5	n.a.	n.a.	n.a.
Anethole	1.39	1.45	4	n.a.	n.a.	n.a.
Galaxolide(1+2)	0.52	0.66	24	n.a.	n.a.	n.a.
Tetrahydrofuran	7.10	8.29	15	1.10	1.06	4
Halocarbons	14.4	14.5	0.7	4.65	3.22	36
1,2-Dichloroethane	0.35	0.33	6	0.05	0.05	6
Carbontetrachloride	0.90	0.92	2	0.47	0.42	12
Chloroform	12.6	12.7	0.9	4.02	2.65	41
Tetrachloroethylene	0.50	0.48	3	0.11	0.10	10
Terpenes	154	158	3	27.4	19.4	34
alpha-Pinene	11.9	12.0	1	0.59	0.42	33
alpha-Terpinene	1.49	1.55	4	3.31	2.44	30
beta-Pinene	8.17	8.14	0.4	1.01	0.80	23
Citronellol-Nerol-Geraniol	7.35	7.81	6	n.a.	n.a.	n.a.
d-Limonene	62.6	63.6	2	10.4	7.91	27
Linalool	39.1	40.9	5	4.08	2.25	58
Menthol	12.9	13.5	5	2.89	2.38	19
Terpineol	7.95	8.45	6	0.49	0.51	5
Terpinolene	2.38	2.06	14	4.60	2.70	52
ΣVOCs	5,601	5,208	7	984	832	17

Table S4. VOC concentrations ($\mu\text{g}/\text{m}^3$) measured by passive and active sampling methods in a hotel room.

VOCs	Passive (3-day)	Active_Ave (20 min)	Day-1 Active (20 min)	Day-2 Active (20 min)	Day-3 Active (20 min)
Alcohols	4,872	1,043	835	1,115	1,179
2-Butoxyethanol	122	65.2	58.0	57.5	80.0
2-Ethyl-1-hexanol	101	51.0	49.6	50.6	52.9
Benzyl alcohol	5.61	3.47	3.26	3.32	3.83
Ethyl alcohol	1,597	286	186	360	312
Isopropyl alcohol	3,046	637	538	644	729
Alkanes	267	319	304	318	336
n-Decane	1.40	1.53	1.48	1.59	1.54
n-Dodecane	2.49	3.28	3.19	3.42	3.24
n-Nonane	0.43	0.51	0.51	0.50	0.50
n-Octane	0.62	0.42	0.33	0.58	0.35
n-Pentadecane	69.5	99.1	94.5	96.3	106
n-Tetradecane	179	189	181	188	197
n-Tridecane	13.6	24.9	21.6	26.7	26.5
n-Undecane	0.85	0.87	0.89	0.91	0.82
Aromatics	37.1	40.4	37.8	41.2	42.1
1,2,3-Trimethylbenzene	0.42	0.50	0.52	0.52	0.47
1,2,4-Trichlorobenzene	0.05	0.03	0.02	0.03	0.03
1,2,4-Trimethylbenzene	1.11	1.29	1.33	1.37	1.18
1,3,5-Trimethylbenzene	0.25	0.28	0.29	0.29	0.25
1,4-Dichlorobenzene	11.3	12.7	12.3	12.7	13.0
Benzene	3.71	2.82	1.91	3.01	3.52
Chlorobenzene	0.07	0.07	0.06	0.08	0.06
Ethylbenzene	0.95	1.05	0.94	1.06	1.15
Isopropylbenzene	0.13	0.13	0.13	0.14	0.12
m,p-Xylene	3.46	3.91	3.57	3.96	4.19
Naphthalene	4.58	5.76	5.64	5.83	5.80
o-Xylene	1.43	1.50	1.30	1.51	1.68
p-Isopropyltoluene	2.24	2.67	2.56	2.79	2.67
Propylbenzene	0.27	0.32	0.33	0.33	0.29
Styrene	1.87	2.03	1.88	2.08	2.13
Toluene	5.30	5.38	5.06	5.52	5.54
Carbonyls & Ketones	30.8	14.0	13.6	13.6	14.5
alpha-Hexylcinnamaldehyde	0.37	0.46	0.46	0.44	0.48
Benzaldehyde	27.4	10.6	10.3	10.5	11.0
Butylphenyl methylpropional	0.45	0.42	0.41	0.39	0.45
Salicylaldehyde	1.29	0.47	0.42	0.48	0.52
Damascenone (Rose Ketone-4)	2.31	1.99	2.03	1.79	2.14

VOCs	Passive (3-day)	Active_Ave (20 min)	Day-1 Active (20 min)	Day-2 Active (20 min)	Day-3 Active (20 min)
Ethers & Esters	25.8	18.5	16.2	20.8	18.5
Amyl salicylate	0.42	0.35	0.33	0.34	0.39
Benzyl Benzoate	0.63	0.46	0.44	0.44	0.50
Ethyl Acetate	8.86	7.88	6.68	9.37	7.60
Methyl salicylate	4.51	2.88	2.68	2.90	3.05
4-Allylanisole	1.65	0.89	0.86	0.90	0.90
Anethole	1.42	0.84	0.81	0.86	0.86
Galaxolide(1+2)	0.59	0.77	0.75	0.70	0.85
Tetrahydrofuran	7.69	4.44	3.68	5.28	4.35
Halocarbons	14.4	7.83	7.11	8.79	7.59
1,2-Dichloroethane	0.34	0.19	0.19	0.22	0.17
Carbontetrachloride	0.91	0.28	0.25	0.30	0.29
Chloroform	12.7	6.86	6.24	7.74	6.60
Tetrachloroethylene	0.49	0.49	0.43	0.53	0.52
Terpenes	156	128	124	135	123
alpha-Pinene	11.9	13.8	12.7	15.6	13.0
alpha-Terpinene	1.52	0.82	0.82	0.89	0.76
beta-Pinene	8.15	4.57	4.30	5.18	4.23
Citronellol-Nerol-Geraniol	7.58	5.16	3.80	5.79	5.88
d-Limonene	63.1	62.7	63.8	65.1	59.1
Linalool	40.0	25.1	24.0	26.9	24.3
Menthol	13.2	9.00	8.63	8.97	9.40
Terpineol	8.20	5.49	5.14	5.55	5.78
Terpinolene	2.22	1.06	1.19	1.15	0.83
ΣVOCs	5,404	1,570	1,338	1,652	1,721

Table S5. Potential Risk of Major VOC groups and selected predominant VOC species detected in hotel rooms, measured in µg/m³.

VOCs	Hotel 1	Hotel 2	Hotel 3	Hotel 4	Median	MRLs	HQ
Alcohols	4,872	838	115	96	477		
Ethyl alcohol	1,597	615	n.a.	n.a.	1,106	n.a.	
Isopropyl alcohol	3,046	210	n.a.	n.a.	1,628	n.a.	
2-Butoxyethanol	122	6.75	52.9	3.71	29.8	2.9×10 ³	0.01
2-Ethyl-1-hexanol	101	4.14	59.0	84.0	71.5	n.a.	
Halocarbons	14.4	3.70	0.35	0.45	2.07		
Chloroform	12.7	3.11	0.01*	0.01*	1.56	490	0.003
Aromatics	37.1	4.38	13.8	41.0	25.5		
1,4-Dichlorobenzene	11.3	0.03*	0.24	0.22	0.23	1.2×10 ⁴	0.00002

VOCs	Hotel 1	Hotel 2	Hotel 3	Hotel 4	Median	MRLs	HQ
Benzene	3.71	0.56	2.73	27.9	3.22	29	0.11
Toluene	5.30	0.88	2.32	5.08	3.70	7.5×10 ³	0.0005
Ethylbenzene	0.95	0.27	0.65	0.71	0.68	2.2×10 ⁴	0.00003
Xylenes	4.89	1.20	2.80	3.50	3.15	8.7×10 ³	0.0004
Styrene	1.87	0.25	2.83	0.35	1.11	2.1×10 ⁴	0.0001
Naphthalene	4.58	0.13	0.21	0.23	0.22	n.a.	
Alkanes	267	7.03	90.9	15.8	53.3		
n-Tetradecane	179	0.65	6.05	4.86	5.46	n.a.	
n-Pentadecane	69.5	0.73	1.87	1.66	1.76	n.a.	
Terpenes	156	22.1	94.4	48.6	71.5		
d-Limonene	63.1	8.75	57.5	17.7	37.6	n.a.	
β-Pinene	8.15	0.87	4.18	2.72	3.45	n.a.	
α-Terpinene	1.52	2.73	14.6	0.07	2.13	n.a.	
Linalool	40.0	2.86	0.12*	7.60	5.23	n.a.	
Menthol	13.2	2.55	9.87	15.5	11.5	n.a.	
Terpineol	8.20	0.50	0.12*	0.12*	0.31	n.a.	
Ethers & Esters	25.8	3.96	7.47	4.07	5.77		
Ethyl Acetate	8.86	1.20	6.33	2.94	4.64	n.a.	
Methyl salicylate	4.51	0.68	0.09*	0.09*	0.39	n.a.	
Tetrahydrofuran	7.69	1.08	0.04*	0.04*	0.56	n.a.	
Carbonyls	29.5	4.14	13.7	13.8	13.8		
Benzaldehyde	27.4	3.89	13.5	13.5	13.5	n.a.	
ΣVOCs	5,404	882	339	217	610		0.13

* - indicate values below the detection limit have been replaced with half of the method detection limit (MDL); MRLs - Minimal risk levels for hazardous substances by ATSDR; HQ – Hazard Quotient.