Insight into Multiple and Multi-level Structures of Biochars and Their Potential Environmental Applications: A Critical Review

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Table S1. Extracted small molecules from biochars.

Compounds	Content (mg/kg)	Biochars
Total volatile compounds[1]	~850	Digestate hydrothermal biochars, 190 ºC
	~2750	Digestate hydrothermal biochars, 230 ºC
	~3390	Digestate hydrothermal biochars, 250 ºC
	~5930	Digestate hydrothermal biochars, 270 ºC
	~1060	Wheat straw hydrothermal biochars, 190 ºC
	~2330	Wheat straw hydrothermal biochars, 230 ºC
	~3390	Wheat straw hydrothermal biochars, 250 ºC
	~5000	Wheat straw hydrothermal biochars, 270 ºC
	~1200	Poplar wood hydrothermal biochars, 190 ºC
	~1290	Poplar wood hydrothermal biochars, 230 ºC
	~1700	Poplar wood hydrothermal biochars, 250 ºC
	~6350	Poplar wood hydrothermal biochars, 270 ºC
	~3600	Pine wood hydrothermal biochars, 190 ºC
	~12910	Pine wood hydrothermal biochars, 230 ºC
	~10370	Pine wood hydrothermal biochars, 250 ºC
	~16290	Pine wood hydrothermal biochars, 270 ºC
	~2750	Massaranduba hydrothermal biochars, 190 ºC
	~2960	Massaranduba hydrothermal biochars, 230 ºC
	~2320	Massaranduba hydrothermal biochars, 250 ºC
	~2110	Massaranduba hydrothermal biochars, 270 ºC
	~2320	Garapa hydrothermal biochars, 190 ºC
	~2540	Garapa hydrothermal biochars, 230 ºC
	~2110	Garapa hydrothermal biochars, 250 ºC
	~6340	Garapa hydrothermal biochars, 270 ºC
Total volatile phenols[1]	~200	Digestate hydrothermal biochars, 190 ºC
	~600	Digestate hydrothermal biochars, 230 ºC
	~783	Digestate hydrothermal biochars, 250 ºC
	~1164	Digestate hydrothermal biochars, 270 ºC
	~105	Wheat straw hydrothermal biochars, 190 ºC
	~381	Wheat straw hydrothermal biochars, 230 ºC
	~400	Wheat straw hydrothermal biochars, 250 ºC
	~990	Wheat straw hydrothermal biochars, 270 ºC
	~148	Poplar wood hydrothermal biochars, 190 ºC
	~388	Poplar wood hydrothermal biochars, 230 ºC
	~423	Poplar wood hydrothermal biochars, 250 ºC
	~1883	Poplar wood hydrothermal biochars, 270 ºC
	~42	Pine wood hydrothermal biochars, 190 ºC
	~382	Pine wood hydrothermal biochars, 230 ºC
	~338	Pine wood hydrothermal biochars, 250 ºC
	~1269	Pine wood hydrothermal biochars, 270 ºC
	~42	Massaranduba hydrothermal biochars, 190 ºC
	~84	Massaranduba hydrothermal biochars, 230 ºC

	~275	Massaranduba hydrothermal biochars, 250 ºC
	~338	Massaranduba hydrothermal biochars, 270 ºC
	~50	Garapa hydrothermal biochars, 190 ºC
	~254	Garapa hydrothermal biochars, 230 ºC
	~317	Garapa hydrothermal biochars, 250 ºC
	~1015	Garapa hydrothermal biochars, 270 ºC
Summary of benzene, toluene, ethylbenzene, and xylene[1]	~0	Digestate hydrothermal biochars, 190 ºC
	~63	Digestate hydrothermal biochars, 230 ºC
	~148	Digestate hydrothermal biochars, 250 ºC
	~390	Digestate hydrothermal biochars, 270 ºC
	~0	Wheat straw hydrothermal biochars, 190 ºC
	~42	Wheat straw hydrothermal biochars, 230 ºC
	~127	Wheat straw hydrothermal biochars, 250 ºC
	~275	Wheat straw hydrothermal biochars, 270 ºC
	~0	Poplar wood hydrothermal biochars, 190 ºC
	~0	Poplar wood hydrothermal biochars, 230 ºC
	~42	Poplar wood hydrothermal biochars, 250 ºC
	~254	Poplar wood hydrothermal biochars, 270 ºC
	~21	Pine wood hydrothermal biochars, 190 ºC
	~250	Pine wood hydrothermal biochars, 230 ºC
	~338	Pine wood hydrothermal biochars, 250 ºC
	~1227	Pine wood hydrothermal biochars, 270 ºC
	~0	Massaranduba hydrothermal biochars, 190 ºC
	~0	Massaranduba hydrothermal biochars, 230 ºC
	~63	Massaranduba hydrothermal biochars, 250 ºC
	~84	Massaranduba hydrothermal biochars, 270 ºC
	~0	Garapa hydrothermal biochars, 190 ºC
	~40	Garapa hydrothermal biochars, 230 ºC
	~80	Garapa hydrothermal biochars, 250 ºC
	~250	Garapa hydrothermal biochars, 270 ºC
Total volatile benzenes[1]	~100	Digestate hydrothermal biochars, 190 ºC
	~200	Digestate hydrothermal biochars, 230 ºC
	~410	Digestate hydrothermal biochars, 250 ºC
	~740	Digestate hydrothermal biochars, 270 ºC
	~105	Wheat straw hydrothermal biochars, 190 ºC
	~310	Wheat straw hydrothermal biochars, 230 ºC
	~845	Wheat straw hydrothermal biochars, 250 ºC
	~850	Wheat straw hydrothermal biochars, 270 ºC
	~0	Poplar wood hydrothermal biochars, 190 ºC
	~0	Poplar wood hydrothermal biochars, 230 ºC
	~105	Poplar wood hydrothermal biochars, 250 ºC
	~510	Poplar wood hydrothermal biochars, 270 ºC
	~1370	Pine wood hydrothermal biochars, 190 ºC
	~9205	Pine wood hydrothermal biochars, 230 ºC
	~7300	Pine wood hydrothermal biochars, 250 ºC

	~9000	Pine wood hydrothermal biochars, 270 ºC
	~0	Massaranduba hydrothermal biochars, 190 ºC
	~0	Massaranduba hydrothermal biochars, 230 ºC
	~420	Massaranduba hydrothermal biochars, 250 ºC
	~210	Massaranduba hydrothermal biochars, 270 ºC
	~0	Garapa hydrothermal biochars, 190 ºC
	~200	Garapa hydrothermal biochars, 230 ºC
	~200	Garapa hydrothermal biochars, 250 ºC
	~1480	Garapa hydrothermal biochars, 270 ºC
naphthalene	n.d.*	Miscanthus derived biochar, 350~650 ºC[2]
acenaphtylene	n.d.	
acenaphthene	n.d.	
fluoranten	3.56±0.26	
phenanthren	7.75±1.05	
anthracene	2.32±0.17	
fluoranthene	n.d.	
pyrene	17.07±2.55	
benzo[a]anthracene	2.08±0.16	
chrysene	6.12±0.67	
benzo[b]fluoranthene	n.d.	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	1.00±0.05	
dibezn[ah]anthracene	n.d.	
benzo[ghi]perylene	n.d.	
indeno [1,2,3-cd] pyrene	n.d.	
naphthalene	n.d.	Willow derived biochar, 350~650 ºC[2]
acenaphtylene	n.d.	
acenaphthene	n.d.	
fluoranten	n.d.	
phenanthren	0.88±0.11	
anthracene	0.11±0.02	
fluoranthene	0.44±0.05	
pyrene	1.26±0.12	
benzo[a]anthracene	0.09±0.01	
chrysene	0.70±0.07	
benzo[b]fluoranthene	n.d.	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.05±0.01	
dibezn[ah]anthracene	n.d.	
benzo[ghi]perylene	n.d.	
indeno [1,2,3-cd] pyrene	n.d.	
naphthalene	n.d.	Wheat straw derived biochar, 350~650 ºC[2]
acenaphtylene	4.89±0.47	
acenaphthene	7.23±1.06	
fluoranten	0.81±0.08	

phenanthren	1.29±0.09	
anthracene	0.18±0.01	
fluoranthene	2.06±0.15	
pyrene	3.04±0.38	
benzo[a]anthracene	0.10±0.02	
chrysene	0.10±0.01	
benzo[b]fluoranthene	0.05±0.01	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.04±0.01	
dibezn[ah]anthracene	n.d.	
benzo[ghi]perylene	0.07±0.01	
indeno [1,2,3-cd] pyrene	n.d.	
Naphthalene[3]	~0.21	Bamboo, 600 ºC
	~0.49	Maize, 600 ºC
	~0.28	Redwood, 300 ºC
	~1.62	Bamboo, 300 ºC
	~2.70	Rice straw, 300 ºC
	~4.66	Maize, 300 ºC
	~5.07	Gasified softwood, 1000 ºC
Acenaphthene[3]	~1.68	Gasified softwood, 1000 ºC
Acenaphthylene[3]	~1.20	Gasified softwood, 1000 ºC
Fluorene[3]	~0.07	Redwood, 300 ºC
	~0.07	Bamboo, 300 ºC
	~0.28	Gasified softwood, 1000 ºC
Anthracene[3]	~0.05	Rice straw, 600 ºC
	~0.12	Redwood, 300 ºC
	~0.21	Rice straw, 300 ºC
	~0.20	Gasified softwood, 1000 ºC
Fluoranthene[3]	~0.05	Redwood, 600 ºC
	~0.14	Rice straw, 600 ºC
	~0.12	Maize, 600 ºC
	~0.2	Redwood, 300 ºC
	~0.49	Rice straw, 300 ºC
	~0.05	Maize, 300 ºC
	~0.08	Gasified softwood, 1000 ºC
Pyrene[3]	~0.84	Bamboo, 600 ºC
	~0.91	Rice straw, 600 ºC
	~0.84	Maize, 600 ºC
	~0.88	Redwood, 300 ºC
	~0.80	Bamboo, 300 ºC
	~1.12	Rice straw, 300 ºC
	~0.82	Maize, 300 ºC
Benzo[a]anthracene[3]	~0.21	Redwood, 300 ºC
Benzo[b]fluoranthene[3]	~0.20	Redwood, 300 ºC
Naphthalene	12.64 ± 1.07	Heartland pine, 850 °C[4]

Acenaphtylene	2.67 ± 0.93	
Acenaphthene	1.51 ± 0.19	
Fluorene	1.24 ± 0.10	
Phenanthrene	9.63 ± 1.06	
Antracene	3.39 ± 0.79	
Fluorantene	4.99 ± 0.46	
Pyrene	3.20 ± 0.28	
Benz(a)antracene	1.77 ± 0.16	
Chrysene	1.69 ± 0.20	
Benzo[b]fluoranthene	0.57 ± 0.23	
Benzo(k)fluorantene	0.80 ± 0.15	
Benzo(a)pyrene	0.75 ± 0.21	
Indeno(123cd)pyrene	0.15 ± 0.05	
Dibenz(ah)antracene	0.05 ± 0.02	
Benzo(ghi)perylene	0.09 ± 0.03	
Total PAHs	45.13 ± 3.42	
Naphthalene	0.097 ± 0.0137	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.013 ± 0.0028	
Phenanthrene	0.078 ± 0.0058	
Antracene	0.014 ± 0.0012	
Fluorantene	0.033 ± 0.0028	
Pyrene	0.043 ± 0.0019	
Benz(a)antracene	0.014 ± 0.0017	Hardwood, 450-500 °C[4]
Chrysene	0.018 ± 0.0012	
Benzo[b]fluoranthene	0.007 ± 0.0064	
Benzo(k)fluorantene	0.004 ± 0.0032	
Benzo(a)pyrene	0.008 ± 0.0017	
Indeno(123cd)pyrene	0.004 ± 0.0007	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.005 ± 0.0005	
Total PAHs	0.338 ± 0.0267	
Naphthalene	0.321 ± 0.0131	
Acenaphtylene	0.003 ± 0.0030	
Acenaphthene	0.000 ± 0.0000	Lodge pole pine, 700-750 °C[4]
Fluorene	0.010 ± 0.0009	
Phenanthrene	0.270 ± 0.0268	
Antracene	0.073 ± 0.0063	

Fluorantene	0.065 ± 0.0037	
Pyrene	0.077 ± 0.0042	
Benz(a)antracene	0.046 ± 0.0049	
Chrysene	0.044 ± 0.0027	
Benzo[b]fluoranthene	0.019 ± 0.0029	
Benzo(k)fluorantene	0.015 ± 0.0021	
Benzo(a)pyrene	0.036 ± 0.0039	
Indeno(123cd)pyrene	0.012 ± 0.0037	
Dibenz(ah)antracene	0.003 ± 0.0006	
Benzo(ghi)perylene	0.012 ± 0.0032	
Total PAHs	1.008 ± 0.0543	
Naphthalene	0.042 ± 0.0002	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.008 ± 0.0068	
Fluorene	0.059 ± 0.0036	
Phenanthrene	0.069 ± 0.0053	
Antracene	0.024 ± 0.0017	
Fluorantene	0.025 ± 0.0015	
Pyrene	0.042 ± 0.0008	
Benz(a)antracene	0.013 ± 0.0004	Digested dairy manure, 300 °C[4]
Chrysene	0.017 ± 0.0009	
Benzo[b]fluoranthene	0.001 ± 0.0025	
Benzo(k)fluorantene	0.004 ± 0.0069	
Benzo(a)pyrene	0.017 ± 0.0015	
Indeno(123cd)pyrene	0.005 ± 0.0046	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.005 ± 0.0048	
Total PAHs	0.332 ± 0.0191	
Naphthalene	0.053 ± 0.0136	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.030 ± 0.0085	
Phenanthrene	0.050 ± 0.0121	
Antracene	0.012 ± 0.0026	Digested dairy manure, 400 °C[4]
Fluorantene	0.019 ± 0.0034	
Pyrene	0.030 ± 0.0056	
Benz(a)antracene	0.010 ± 0.0030	
Chrysene	0.015 ± 0.0043	
Benzo[b]fluoranthene	0.000 ± 0.0000	

Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.007 ± 0.0063	
Indeno(123cd)pyrene	0.006 ± 0.0055	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.003 ± 0.0033	
Total PAHs	0.234 ± 0.0651	
Naphthalene	0.086 ± 0.0041	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.057 ± 0.0145	
Phenanthrene	0.064 ± 0.0127	
Antracene	0.019 ± 0.0067	
Fluorantene	0.024 ± 0.0063	
Pyrene	0.040 ± 0.0090	
Benz(a)antracene	0.011 ± 0.0029	Digested dairy manure, 500 °C[4]
Chrysene	0.022 ± 0.0060	
Benzo[b]fluoranthene	0.002 ± 0.0037	
Benzo(k)fluorantene	0.003 ± 0.0046	
Benzo(a)pyrene	0.011 ± 0.0096	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.003 ± 0.0054	
Total PAHs	0.343 ± 0.0791	
Naphthalene	0.074 ± 0.0117	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.005 ± 0.0048	
Phenanthrene	0.043 ± 0.0065	
Antracene	0.007 ± 0.0010	
Fluorantene	0.016 ± 0.0028	
Pyrene	0.023 ± 0.0031	
Benz(a)antracene	0.006 ± 0.0009	Digested dairy manure, 600 °C[4]
Chrysene	0.010 ± 0.0007	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.003 ± 0.0026	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.001 ± 0.0025	

Total PAHs	0.189 ± 0.0264	
Naphthalene	0.044 ± 0.0056	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.016 ± 0.0009	
Fluorene	0.046 ± 0.0011	
Phenanthrene	0.067 ± 0.0033	
Antracene	0.009 ± 0.0077	
Fluorantene	0.023 ± 0.0015	
Pyrene	0.039 ± 0.0028	
Benz(a)antracene	0.011 ± 0.0016	Food waste, 300 °C[4]
Chrysene	0.025 ± 0.0013	
Benzo[b]fluoranthene	0.010 ± 0.0012	
Benzo(k)fluorantene	0.008 ± 0.0028	
Benzo(a)pyrene	0.031 ± 0.0020	
Indeno(123cd)pyrene	0.006 ± 0.0106	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.038 ± 0.0069	
Total PAHs	0.373 ± 0.0163	
Naphthalene	0.062 ± 0.0075	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.013 ± 0.0029	
Fluorene	0.035 ± 0.0016	
Phenanthrene	0.085 ± 0.0059	
Antracene	0.016 ± 0.0029	
Fluorantene	0.026 ± 0.0057	
Pyrene	0.046 ± 0.0062	
Benz(a)antracene	0.019 ± 0.0020	Food waste, 400 °C[4]
Chrysene	0.037 ± 0.0033	
Benzo[b]fluoranthene	0.013 ± 0.0037	
Benzo(k)fluorantene	0.016 ± 0.0019	
Benzo(a)pyrene	0.023 ± 0.0038	
Indeno(123cd)pyrene	0.018 ± 0.0040	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.028 ± 0.0021	
Total PAHs	0.439 ± 0.0346	
Naphthalene	0.090 ± 0.0185	
Acenaphtylene	0.000 ± 0.0000	Food waste, 500 °C[4]
Acenaphthene	0.018 ± 0.0090	
Fluorene	0.063 ± 0.0227	

Phenanthrene	0.123 ± 0.0457	
Antracene	0.034 ± 0.0106	
Fluorantene	0.046 ± 0.0185	
Pyrene	0.069 ± 0.0241	
Benz(a)antracene	0.029 ± 0.0098	
Chrysene	0.028 ± 0.0091	
Benzo[b]fluoranthene	0.017 ± 0.0092	
Benzo(k)fluorantene	0.015 ± 0.0077	
Benzo(a)pyrene	0.036 ± 0.0085	
Indeno(123cd)pyrene	0.028 ± 0.0094	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.043 ± 0.0147	
Total PAHs	0.638 ± 0.2076	
Naphthalene	0.040 ± 0.0008	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.000 ± 0.0000	
Phenanthrene	0.025 ± 0.0011	
Antracene	0.004 ± 0.0003	
Fluorantene	0.008 ± 0.0007	
Pyrene	0.013 ± 0.0019	
Benz(a)antracene	0.003 ± 0.0003	Food waste, 600 °C[4]
Chrysene	0.005 ± 0.0013	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.098 ± 0.0038	
Naphthalene	0.043 ± 0.0192	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.014 ± 0.0023	
Phenanthrene	0.039 ± 0.0083	Paper mill waste, 300 °C[4]
Antracene	0.005 ± 0.0025	
Fluorantene	0.010 ± 0.0027	
Pyrene	0.009 ± 0.0019	
Benz(a)antracene	0.006 ± 0.0017	

Chrysene	0.009 ± 0.0019	
Benzo[b]fluoranthene	0.007 ± 0.0008	
Benzo(k)fluorantene	0.005 ± 0.0019	
Benzo(a)pyrene	0.011 ± 0.0036	
Indeno(123cd)pyrene	0.012 ± 0.0006	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.011 ± 0.0014	
Total PAHs	0.182 ± 0.0398	
Naphthalene	0.046 ± 0.0029	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.030 ± 0.0034	
Phenanthrene	0.071 ± 0.0045	
Antracene	0.012 ± 0.0027	
Fluorantene	0.018 ± 0.0002	
Pyrene	0.038 ± 0.0035	
Benz(a)antracene	0.028 ± 0.0044	Paper mill waste, 400 °C[4]
Chrysene	0.021 ± 0.0016	
Benzo[b]fluoranthene	0.018 ± 0.0050	
Benzo(k)fluorantene	0.018 ± 0.0006	
Benzo(a)pyrene	0.048 ± 0.0028	
Indeno(123cd)pyrene	0.045 ± 0.0025	
Dibenz(ah)antracene	0.007 ± 0.0063	
Benzo(ghi)perylene	0.054 ± 0.0064	
Total PAHs	0.456 ± 0.0385	
Naphthalene	0.064 ± 0.0155	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.003 ± 0.0033	
Fluorene	0.023 ± 0.0017	
Phenanthrene	0.068 ± 0.0100	
Antracene	0.013 ± 0.0015	
Fluorantene	0.024 ± 0.0035	Paper mill waste, 500 °C[4]
Pyrene	0.040 ± 0.0098	
Benz(a)antracene	0.015 ± 0.0032	
Chrysene	0.016 ± 0.0072	
Benzo[b]fluoranthene	0.010 ± 0.0057	
Benzo(k)fluorantene	0.010 ± 0.0038	
Benzo(a)pyrene	0.021 ± 0.0097	
Indeno(123cd)pyrene	0.015 ± 0.0060	

Dibenz(ah)antracene	0.002 ± 0.0035	
Benzo(ghi)perylene	0.023 ± 0.0096	
Total PAHs	0.348 ± 0.0662	
Naphthalene	0.063 ± 0.0000	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.004 ± 0.0000	
Fluorene	0.024 ± 0.0000	
Phenanthrene	0.064 ± 0.0000	
Antracene	0.013 ± 0.0000	
Fluorantene	0.020 ± 0.0000	
Pyrene	0.028 ± 0.0000	
Benz(a)antracene	0.010 ± 0.0000	Paper mill waste, 600 °C[4]
Chrysene	0.012 ± 0.0000	
Benzo[b]fluoranthene	0.006 ± 0.0000	
Benzo(k)fluorantene	0.006 ± 0.0000	
Benzo(a)pyrene	0.010 ± 0.0000	
Indeno(123cd)pyrene	0.007 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.009 ± 0.0000	
Total PAHs	0.276 ± 0.0000	
Naphthalene	0.214 ± 0.0131	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.075 ± 0.0063	
Fluorene	0.239 ± 0.0060	
Phenanthrene	0.269 ± 0.0142	
Antracene	0.075 ± 0.0049	
Fluorantene	0.108 ± 0.0066	
Pyrene	0.180 ± 0.0026	
Benz(a)antracene	0.070 ± 0.0034	Corn stover, 350 °C[4]
Chrysene	0.111 ± 0.0054	
Benzo[b]fluoranthene	0.027 ± 0.0052	
Benzo(k)fluorantene	0.028 ± 0.0065	
Benzo(a)pyrene	0.085 ± 0.0009	
Indeno(123cd)pyrene	0.065 ± 0.0073	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.062 ± 0.0084	
Total PAHs	1.609 ± 0.0146	
Naphthalene	0.655 ± 0.1850	Corn stover, 450 °C[4]
Acenaphtylene	0.000 ± 0.0000	

Acenaphthene	0.000 ± 0.0000	
Fluorene	0.056 ± 0.0029	
Phenanthrene	0.451 ± 0.0309	
Antracene	0.079 ± 0.0025	
Fluorantene	0.116 ± 0.0069	
Pyrene	0.144 ± 0.0111	
Benz(a)antracene	0.083 ± 0.0067	
Chrysene	0.112 ± 0.0076	
Benzo[b]fluoranthene	0.037 ± 0.0066	
Benzo(k)fluorantene	0.045 ± 0.0050	
Benzo(a)pyrene	0.077 ± 0.0087	
Indeno(123cd)pyrene	0.049 ± 0.0060	
Dibenz(ah)antracene	0.003 ± 0.0054	
Benzo(ghi)perylene	0.050 ± 0.0063	
Total PAHs	1.959 ± 0.2747	
Naphthalene	0.833 ± 0.1677	
Acenaphtylene	0.010 ± 0.0086	
Acenaphthene	0.008 ± 0.0137	
Fluorene	0.055 ± 0.0033	
Phenanthrene	0.313 ± 0.1562	
Antracene	0.052 ± 0.0268	
Fluorantene	0.082 ± 0.0315	
Pyrene	0.102 ± 0.0453	
Benz(a)antracene	0.051 ± 0.0307	Corn stover, 550 °C[4]
Chrysene	0.068 ± 0.0474	
Benzo[b]fluoranthene	0.025 ± 0.0082	
Benzo(k)fluorantene	0.036 ± 0.0122	
Benzo(a)pyrene	0.054 ± 0.0234	
Indeno(123cd)pyrene	0.036 ± 0.0113	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.045 ± 0.0106	
Total PAHs	1.770 ± 0.2553	
Naphthalene	1.166 ± 0.0667	
Acenaphtylene	0.071 ± 0.0141	
Acenaphthene	0.017 ± 0.0039	
Fluorene	0.045 ± 0.0074	Wheat straw, 450 °C[4]
Phenanthrene	0.174 ± 0.0161	
Antracene	0.039 ± 0.0068	
Fluorantene	0.086 ± 0.0148	

Pyrene	0.087 ± 0.0074	
Benz(a)antracene	0.016 ± 0.0032	
Chrysene	0.024 ±0.0052	
Benzo[b]fluoranthene	0.017 ± 0.0072	
Benzo(k)fluorantene	0.009 ± 0.0081	
Benzo(a)pyrene	0.015 ± 0.0035	
Indeno(123cd)pyrene	0.011 ± 0.0033	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.017 ± 0.0045	
Total PAHs	1.793 ± 0.1148	
Naphthalene	0.140 ± 0.0113	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.011 ± 0.0035	
Phenanthrene	0.079 ± 0.0097	
Antracene	0.009 ± 0.0005	
Fluorantene	0.022 ± 0.0029	
Pyrene	0.027 ± 0.0027	
Benz(a)antracene	0.012 ± 0.0030	Rubberwood sawdust, 500 °C[4]
Chrysene	0.015 ±0.0013	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.315 ± 0.0304	
Naphthalene	0.069 ± 0.0143	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.002 ± 0.0037	
Fluorene	0.002 ± 0.0027	
Phenanthrene	0.035 ± 0.0073	
Antracene	0.003 ± 0.0005	
Fluorantene	0.010 ± 0.0034	Rubberwood sawdust, 840 °C[4]
Pyrene	0.013 ± 0.0045	
Benz(a)antracene	0.001 ± 0.0012	
Chrysene	0.005 ±0.0017	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	

Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.139 ± 0.0384	
Naphthalene	0.040 ± 0.0013	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.001 ± 0.0009	
Fluorene	0.005 ± 0.0013	
Phenanthrene	0.027 ± 0.0006	
Antracene	0.001 ± 0.0016	
Fluorantene	0.009 ± 0.0013	
Pyrene	0.009 ± 0.0009	
Benz(a)antracene	0.001 ± 0.0001	Oak, 250 °C[4]
Chrysene	0.004 ±0.0007	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0006	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.096 ± 0.0030	
Naphthalene	0.037 ± 0.0043	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.003 ± 0.0011	
Fluorene	0.019 ± 0.0016	
Phenanthrene	0.031 ± 0.0012	
Antracene	0.002 ± 0.0013	
Fluorantene	0.017 ± 0.0036	
Pyrene	0.016 ± 0.0027	
Benz(a)antracene	0.003 ± 0.0017	Oak, 400 °C[4]
Chrysene	0.006 ±0.0021	
Benzo[b]fluoranthene	0.002 ± 0.0041	
Benzo(k)fluorantene	0.001 ± 0.0025	
Benzo(a)pyrene	0.002 ± 0.0041	
Indeno(123cd)pyrene	0.001 ± 0.0020	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.001 ± 0.0021	
Total PAHs	0.141 ± 0.0292	

Naphthalene	0.059 ± 0.0071	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.007 ± 0.0037	
Phenanthrene	0.054 ± 0.0082	
Antracene	0.007 ± 0.0010	
Fluorantene	0.016 ± 0.0030	
Pyrene	0.015 ± 0.0015	
Benz(a)antracene	0.006 ± 0.0005	Oak, 650 °C[4]
Chrysene	0.009 ±0.0003	
Benzo[b]fluoranthene	0.001 ± 0.0022	
Benzo(k)fluorantene	0.001 ± 0.0018	
Benzo(a)pyrene	0.002 ± 0.0028	
Indeno(123cd)pyrene	0.004 ± 0.0003	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.003 ± 0.0016	
Total PAHs	0.183 ± 0.0201	
Naphthalene	0.069 ± 0.0073	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.009 ± 0.0079	
Phenanthrene	0.055 ± 0.0042	
Antracene	0.002 ± 0.0020	
Fluorantene	0.022 ± 0.0027	
Pyrene	0.022 ± 0.0024	
Benz(a)antracene	0.003 ± 0.0007	Pine, 250 °C[4]
Chrysene	0.007 ±0.0020	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.189 ± 0.0145	
Naphthalene	0.113 ± 0.0447	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	Pine, 400 °C[4]
Fluorene	0.011 ± 0.0101	
Phenanthrene	0.087 ± 0.0305	

Antracene	0.004 ± 0.0042	
Fluorantene	0.028 ± 0.0113	
Pyrene	0.031 ± 0.0163	
Benz(a)antracene	0.004 ± 0.0027	
Chrysene	0.012 ±0.0078	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.289 ± 0.1164	
Naphthalene	0.050 ± 0.0051	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.002 ± 0.0035	
Phenanthrene	0.042 ± 0.0081	
Antracene	0.003 ± 0.0011	
Fluorantene	0.013 ± 0.0037	
Pyrene	0.013 ± 0.0037	
Benz(a)antracene	0.004 ± 0.0012	Pine, 650 °C[4]
Chrysene	0.007 ±0.0020	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.133 ± 0.0241	
Naphthalene	0.050 ± 0.0017	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.004 ± 0.0013	
Phenanthrene	0.046 ± 0.0033	Grass, 250 °C[4]
Antracene	0.001 ± 0.0010	
Fluorantene	0.012 ± 0.0015	
Pyrene	0.010 ± 0.0007	
Benz(a)antracene	0.002 ± 0.0006	
Chrysene	0.008 ±0.0014	

Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.132 ± 0.0081	
Naphthalene	0.040 ± 0.0111	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.018 ± 0.0037	
Phenanthrene	0.025 ± 0.0062	
Antracene	0.000 ± 0.0000	
Fluorantene	0.013 ± 0.0031	
Pyrene	0.014 ± 0.0016	
Benz(a)antracene	0.002 ± 0.0005	Grass, 400 °C[4]
Chrysene	0.005 ±0.0009	
Benzo[b]fluoranthene	0.002 ± 0.0018	
Benzo(k)fluorantene	0.001 ± 0.0014	
Benzo(a)pyrene	0.002 ± 0.0016	
Indeno(123cd)pyrene	0.002 ± 0.0013	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.002 ± 0.0003	
Total PAHs	0.126 ± 0.0317	
Naphthalene	0.110 ± 0.1122	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.000 ± 0.0000	
Phenanthrene	0.069 ± 0.0715	
Antracene	0.007 ± 0.0055	
Fluorantene	0.024 ± 0.0324	
Pyrene	0.027 ± 0.0404	Grass, 650 °C[4]
Benz(a)antracene	0.008 ± 0.0096	
Chrysene	0.013 ±0.0143	
Benzo[b]fluoranthene	0.008 ± 0.0072	
Benzo(k)fluorantene	0.005 ± 0.0047	
Benzo(a)pyrene	0.008 ± 0.0056	
Indeno(123cd)pyrene	0.006 ± 0.0047	
Dibenz(ah)antracene	0.000 ± 0.0000	

Benzo(ghi)perylene	0.006 ± 0.0074	
Total PAHs	0.291 ± 0.0608	
Naphthalene	0.070 ± 0.0036	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.009 ± 0.0021	
Phenanthrene	0.063 ± 0.0005	
Antracene	0.004 ± 0.0016	
Fluorantene	0.023 ± 0.0000	
Pyrene	0.020 ± 0.0004	
Benz(a)antracene	0.003 ± 0.0002	Oak aged 1 year, 250 °C[4]
Chrysene	0.008 ± 0.0010	
Benzo[b]fluoranthene	0.005 ± 0.0031	
Benzo(k)fluorantene	0.005 ± 0.0015	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.210 ± 0.0078	
Naphthalene	0.074 ± 0.0069	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.011 ± 0.0002	
Phenanthrene	0.049 ± 0.0046	
Antracene	0.004 ± 0.0001	
Fluorantene	0.021 ± 0.0037	
Pyrene	0.020 ± 0.0016	
Benz(a)antracene	0.003 ± 0.0009	Oak aged 1 year, 400 °C[4]
Chrysene	0.008 ± 0.0004	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.190 ± 0.0017	
Naphthalene	0.157 ± 0.0330	
Acenaphtylene	0.000 ± 0.0000	Oak aged 1 year, 650 °C[4]
Acenaphthene	0.000 ± 0.0000	

Fluorene	0.000 ± 0.0000	
Phenanthrene	0.081 ± 0.0199	
Antracene	0.006 ± 0.0013	
Fluorantene	0.026 ± 0.0048	
Pyrene	0.025 ± 0.0051	
Benz(a)antracene	0.006 ± 0.0014	
Chrysene	0.012 ± 0.0034	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.003 ± 0.0041	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.005 ± 0.0001	
Total PAHs	0.321 ± 0.0731	
Naphthalene	0.060 ± 0.0346	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.000 ± 0.0000	
Phenanthrene	0.035 ± 0.0173	
Antracene	0.000 ± 0.0007	
Fluorantene	0.014 ± 0.0064	
Pyrene	0.014 ± 0.0075	
Benz(a)antracene	0.003 ± 0.0011	Pine aged 1 year, 250 °C[4]
Chrysene	0.006 ± 0.0034	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.002 ± 0.0027	
Total PAHs	0.133 ± 0.0722	
Naphthalene	0.075 ± 0.0046	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.005 ± 0.0065	Pine aged 1 year, 400 °C[4]
Phenanthrene	0.049 ± 0.0004	
Antracene	0.002 ± 0.0001	
Fluorantene	0.019 ± 0.0001	
Pyrene	0.021 ± 0.0044	

Benz(a)antracene	0.004 ± 0.0014	
Chrysene	0.008 ± 0.0014	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.183 ± 0.0096	
Naphthalene	0.078 ± 0.0507	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.025 ± 0.0355	
Phenanthrene	0.050 ± 0.0382	
Antracene	0.004 ± 0.0028	
Fluorantene	0.018 ± 0.0146	
Pyrene	0.016 ± 0.0115	
Benz(a)antracene	0.004 ± 0.0024	Pine aged 1 year, 650 °C[4]
Chrysene	0.006 ± 0.0039	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.001 ± 0.0020	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.002 ± 0.0031	
Total PAHs	0.204 ± 0.1648	
Naphthalene	0.075 ± 0.0332	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.007 ± 0.0100	
Phenanthrene	0.060 ± 0.0182	
Antracene	0.003 ± 0.0007	
Fluorantene	0.021 ± 0.0112	Grass aged 1 year, 250 °C[4]
Pyrene	0.018 ± 0.0067	
Benz(a)antracene	0.003 ± 0.0012	
Chrysene	0.008 ± 0.0040	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	

Indeno(123cd)pyrene	0.001 ± 0.0013	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.196 ± 0.0839	
Naphthalene	0.093 ± 0.0335	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.022 ± 0.0070	
Phenanthrene	0.071 ± 0.0179	
Antracene	0.002 ± 0.0035	
Fluorantene	0.037 ± 0.0146	
Pyrene	0.036 ± 0.0124	
Benz(a)antracene	0.005 ± 0.0021	Grass aged 1 year, 400 °C[4]
Chrysene	0.014 ± 0.0050	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.004 ± 0.0054	
Indeno(123cd)pyrene	0.006 ± 0.0018	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.006 ± 0.0043	
Total PAHs	0.296 ± 0.1005	
Naphthalene	0.254 ± 0.0037	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.017 ± 0.0013	
Phenanthrene	0.156 ± 0.0124	
Antracene	0.014 ± 0.0011	
Fluorantene	0.043 ± 0.0055	
Pyrene	0.053 ± 0.0001	
Benz(a)antracene	0.020 ± 0.0007	Grass aged 1 year, 650 °C[4]
Chrysene	0.032 ± 0.0021	
Benzo[b]fluoranthene	0.018 ± 0.0249	
Benzo(k)fluorantene	0.012 ± 0.0163	
Benzo(a)pyrene	0.027 ± 0.0039	
Indeno(123cd)pyrene	0.019 ± 0.0001	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.019 ± 0.0014	
Total PAHs	0.684 ± 0.0224	
Naphthalene	0.045 ± 0.0049	Pine wood, 250 °C[4]

Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.001 ± 0.0017	
Fluorene	0.010 ± 0.0013	
Phenanthrene	0.038 ± 0.0034	
Antracene	0.002 ± 0.0019	
Fluorantene	0.004 ± 0.0009	
Pyrene	0.004 ± 0.0008	
Benz(a)antracene	0.000 ± 0.0000	
Chrysene	0.002 ± 0.0016	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.105 ± 0.0096	
Naphthalene	0.091 ± 0.0032	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.002 ± 0.0037	
Fluorene	0.014 ± 0.0029	
Phenanthrene	0.062 ± 0.0075	
Antracene	0.000 ± 0.0000	
Fluorantene	0.008 ± 0.0014	
Pyrene	0.005 ± 0.0011	
Benz(a)antracene	0.000 ± 0.0000	Pine wood, 350 °C[4]
Chrysene	0.000 ± 0.0000	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.183 ± 0.0192	
Naphthalene	0.034 ± 0.0047	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.004 ± 0.0030	Pine wood, 500 °C[4]
Fluorene	0.010 ± 0.0026	
Phenanthrene	0.041 ± 0.0103	
Antracene	0.003 ± 0.0021	

Fluorantene	0.008 ± 0.0038	
Pyrene	0.005 ± 0.0021	
Benz(a)antracene	0.000 ± 0.0004	
Chrysene	0.000 ± 0.0005	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.106 ± 0.0202	
Naphthalene	0.037 ± 0.0079	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.008 ± 0.0007	
Phenanthrene	0.029 ± 0.0010	
Antracene	0.001 ± 0.0011	
Fluorantene	0.003 ± 0.0005	
Pyrene	0.003 ± 0.0010	
Benz(a)antracene	0.000 ± 0.0000	Pine wood, 600 °C[4]
Chrysene	0.000 ± 0.0000	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.081 ± 0.0100	
Naphthalene	0.054 ± 0.0067	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.007 ± 0.0018	
Phenanthrene	0.037 ± 0.0082	
Antracene	0.000 ± 0.0011	Pine wood, 700 °C[4]
Fluorantene	0.007 ± 0.0026	
Pyrene	0.005 ± 0.0016	
Benz(a)antracene	0.000 ± 0.0000	
Chrysene	0.000 ± 0.0000	
Benzo[b]fluoranthene	0.000 ± 0.0000	

Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.111 ± 0.0142	
Naphthalene	0.072 ± 0.0036	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.009 ± 0.0008	
Fluorene	0.011 ± 0.0030	
Phenanthrene	0.040 ± 0.0065	
Antracene	0.000 ± 0.0000	
Fluorantene	0.003 ± 0.0010	
Pyrene	0.002 ± 0.0016	
Benz(a)antracene	0.000 ± 0.0000	Pine wood, 800 °C[4]
Chrysene	0.000 ± 0.0000	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.138 ± 0.0137	
Naphthalene	0.053 ± 0.0046	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.000 ± 0.0000	
Phenanthrene	0.020 ± 0.0097	
Antracene	0.000 ± 0.0000	
Fluorantene	0.001 ± 0.0016	
Pyrene	0.000 ± 0.0000	Pine wood, 900 °C[4]
Benz(a)antracene	0.000 ± 0.0000	
Chrysene	0.000 ± 0.0000	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	

Total PAHs	0.073 ± 0.0127	
Naphthalene	0.059 ± 0.0133	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.009 ± 0.0028	
Phenanthrene	0.034 ± 0.0099	
Antracene	0.000 ± 0.0000	
Fluorantene	0.004 ± 0.0015	
Pyrene	0.004 ± 0.0009	
Benz(a)antracene	0.000 ± 0.0004	Switch grass, 250 °C[4]
Chrysene	0.007 ± 0.0043	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.118 ± 0.0063	
Naphthalene	0.100 ± 0.0194	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.074 ± 0.0444	
Phenanthrene	0.181 ± 0.0948	
Antracene	0.022 ± 0.0089	
Fluorantene	0.040 ± 0.0276	
Pyrene	0.053 ± 0.0367	
Benz(a)antracene	0.018 ± 0.0117	Switch grass, 350 °C[4]
Chrysene	0.090 ± 0.0557	
Benzo[b]fluoranthene	0.003 ± 0.0050	
Benzo(k)fluorantene	0.002 ± 0.0036	
Benzo(a)pyrene	0.009 ± 0.0053	
Indeno(123cd)pyrene	0.001 ± 0.0021	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.003 ± 0.0057	
Total PAHs	0.597 ± 0.3053	
Naphthalene	0.064 ± 0.0130	
Acenaphtylene	0.006 ± 0.0058	Switch grass, 500 °C[4]
Acenaphthene	0.006 ± 0.0063	
Fluorene	0.024 ± 0.0160	

Phenanthrene	0.060 ± 0.0150	
Antracene	0.006 ± 0.0019	
Fluorantene	0.014 ± 0.0035	
Pyrene	0.013 ± 0.0036	
Benz(a)antracene	0.006 ± 0.0018	
Chrysene	0.007 ± 0.0023	
Benzo[b]fluoranthene	0.005 ± 0.0043	
Benzo(k)fluorantene	0.002 ± 0.0022	
Benzo(a)pyrene	0.005 ± 0.0034	
Indeno(123cd)pyrene	0.003 ± 0.0025	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.004 ± 0.0007	
Total PAHs	0.225 ± 0.0488	
Naphthalene	0.090 ± 0.0214	
Acenaphtylene	0.021 ± 0.0090	
Acenaphthene	0.005 ± 0.0053	
Fluorene	0.025 ± 0.0063	
Phenanthrene	0.067 ± 0.0160	
Antracene	0.008 ± 0.0028	
Fluorantene	0.022 ± 0.0053	
Pyrene	0.019 ± 0.0056	
Benz(a)antracene	0.005 ± 0.0021	Switch grass, 600 °C[4]
Chrysene	0.005 ± 0.0021	
Benzo[b]fluoranthene	0.004 ± 0.0025	
Benzo(k)fluorantene	0.003 ± 0.0021	
Benzo(a)pyrene	0.004 ± 0.0036	
Indeno(123cd)pyrene	0.001 ± 0.0012	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.001 ± 0.0010	
Total PAHs	0.279 ± 0.0577	
Naphthalene	0 .055 ± 0. 01	
Acenaphtylene	0 .013 ± 0. 00	
Acenaphthene	0 .002 ± 0. 00	
Fluorene	0 .009 ± 0. 00	
Phenanthrene	0 .040 ± 0. 00	Switch grass, 700 °C[4]
Antracene	0 .004 ± 0. 00	
Fluorantene	0 .017 ± 0. 00	
Pyrene	0 .013 ± 0. 00	
Benz(a)antracene	0 .003 ± 0. 00	

Chrysene	0 .003 ± 0. 00	
Benzo[b]fluoranthene	0 .000 ± 0. 00	
Benzo(k)fluorantene	0 .000 ± 0. 00	
Benzo(a)pyrene	0 .000 ± 0. 00	
Indeno(123cd)pyrene	0 .000 ± 0. 00	
Dibenz(ah)antracene	0 .000 ± 0. 00	
Benzo(ghi)perylene	0 .000 ± 0. 00	
Total PAHs	0.158 ± 0. 01	
Naphthalene	0.525 ± 0.1919	
Acenaphtylene	0.005 ± 0.0045	
Acenaphthene	0.004 ± 0.0035	
Fluorene	0.038 ± 0.0074	
Phenanthrene	0.592 ± 0.0838	
Antracene	0.085 ± 0.0086	
Fluorantene	0.101 ± 0.0113	
Pyrene	0.110 ± 0.0140	
Benz(a)antracene	0.057 ± 0.0060	Zambia charcoal dust, 350-450 °C[4]
Chrysene	0.078 ± 0.0114	
Benzo[b]fluoranthene	0.029 ± 0.0067	
Benzo(k)fluorantene	0.015 ± 0.0029	
Benzo(a)pyrene	0.024 ± 0.0030	
Indeno(123cd)pyrene	0.013 ± 0.0003	
Dibenz(ah)antracene	0.005 ± 0.0003	
Benzo(ghi)perylene	0.018 ± 0.0015	
Total PAHs	1.701 ± 0.2386	
Naphthalene	0.690 ± 0.0296	
Acenaphtylene	0.004 ± 0.0063	
Acenaphthene	0.028 ± 0.0076	
Fluorene	0.160 ± 0.0184	
Phenanthrene	0.450 ± 0.0396	
Antracene	0.089 ± 0.0098	
Fluorantene	0.167 ± 0.0145	
Pyrene	0.155 ± 0.0109	Zambia stover, 350-450 °C[4]
Benz(a)antracene	0.056 ± 0.0065	
Chrysene	0.086 ± 0.0069	
Benzo[b]fluoranthene	0.024 ± 0.0046	
Benzo(k)fluorantene	0.017 ± 0.0013	
Benzo(a)pyrene	0.025 ± 0.0014	
Indeno(123cd)pyrene	0.014 ± 0.0025	

Dibenz(ah)antracene	0.001 ± 0.0021	
Benzo(ghi)perylene	0.014 ± 0.0018	
Total PAHs	1.980 ± 0.1435	
Naphthalene	0.560 ± 0.4078	
Acenaphtylene	0.006 ± 0.0054	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.034 ± 0.0040	
Phenanthrene	0.673 ± 0.0413	
Antracene	0.086 ± 0.0040	
Fluorantene	0.108 ± 0.0040	
Pyrene	0.126 ± 0.0061	
Benz(a)antracene	0.042 ± 0.0023	Indonesia mixed forest , 350-450 °C[4]
Chrysene	0.071 ± 0.0039	
Benzo[b]fluoranthene	0.027 ± 0.0064	
Benzo(k)fluorantene	0.017 ± 0.0026	
Benzo(a)pyrene	0.027 ± 0.0041	
Indeno(123cd)pyrene	0.018 ± 0.0005	
Dibenz(ah)antracene	0.005 ± 0.0011	
Benzo(ghi)perylene	0.028 ± 0.0016	
Total PAHs	1.829 ± 0.3529	
Naphthalene	0.246 ± 0.0026	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.029 ± 0.0023	
Phenanthrene	0.102 ± 0.0020	
Antracene	0.016 ± 0.0038	
Fluorantene	0.027 ± 0.0012	
Pyrene	0.028 ± 0.0022	
Benz(a)antracene	0.015 ± 0.0003	Indonesia rice husk char , 350-450 °C[4]
Chrysene	0.022 ± 0.0013	
Benzo[b]fluoranthene	0.003 ± 0.0033	
Benzo(k)fluorantene	0.003 ± 0.0046	
Benzo(a)pyrene	0.010 ± 0.0005	
Indeno(123cd)pyrene	0.006 ± 0.0005	
Dibenz(ah)antracene	0.001 ± 0.0015	
Benzo(ghi)perylene	0.006 ± 0.0009	
Total PAHs	0.514 ± 0.0148	
Naphthalene	0.285 ± 0.0826	Kenya maize residues as corncobs, open fire[4]
Acenaphtylene	0.000 ± 0.0000	

Acenaphthene	0.010 ± 0.0020	
Fluorene	0.109 ± 0.0168	
Phenanthrene	0.311 ± 0.0442	
Antracene	0.067 ± 0.0083	
Fluorantene	0.117 ± 0.0192	
Pyrene	0.118 ± 0.0190	
Benz(a)antracene	0.059 ± 0.0085	
Chrysene	0.070 ± 0.0112	
Benzo[b]fluoranthene	0.027 ± 0.0119	
Benzo(k)fluorantene	0.019 ± 0.0011	
Benzo(a)pyrene	0.041 ± 0.0051	
Indeno(123cd)pyrene	0.023 ± 0.0039	
Dibenz(ah)antracene	0.001 ± 0.0023	
Benzo(ghi)perylene	0.017 ± 0.0018	
Total PAHs	1.273 ± 0.2293	
Naphthalene	0.404 ± 0.1205	
Acenaphtylene	0.005 ± 0.0048	
Acenaphthene	0.023 ± 0.0125	
Fluorene	0.111 ± 0.0242	
Phenanthrene	0.665 ± 0.1554	
Antracene	0.130 ± 0.0335	
Fluorantene	0.352 ± 0.0741	
Pyrene	0.411 ± 0.0869	
Benz(a)antracene	0.279 ± 0.0590	Kenya maize residues as cornstover, open fire[4]
Chrysene	0.226 ± 0.2804	
Benzo[b]fluoranthene	0.130 ± 0.0159	
Benzo(k)fluorantene	0.112 ± 0.0245	
Benzo(a)pyrene	0.197 ± 0.0396	
Indeno(123cd)pyrene	0.120 ± 0.0263	
Dibenz(ah)antracene	0.019 ± 0.0068	
Benzo(ghi)perylene	0.089 ± 0.0066	
Total PAHs	3.273 ± 0.9170	
Naphthalene	0.080 ± 0.0082	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.013 ± 0.0031	Kenya woody biomass as sawdust, open fire[4]
Phenanthrene	0.030 ± 0.0036	
Antracene	0.003 ± 0.0028	
Fluorantene	0.008 ± 0.0009	

Pyrene	0.014 ± 0.0019	
Benz(a)antracene	0.003 ± 0.0004	
Chrysene	0.003 ± 0.0005	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.155 ± 0.0152	
Naphthalene	0.102 ± 0.0039	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.015 ± 0.0016	
Phenanthrene	0.059 ± 0.0493	
Antracene	0.003 ± 0.0023	
Fluorantene	0.014 ± 0.0011	
Pyrene	0.013 ± 0.0012	
Benz(a)antracene	0.001 ± 0.0002	Empty Fruit Bunch (EFB) VESTO[4]
Chrysene	0.003 ± 0.0006	
Benzo[b]fluoranthene	0.001 ± 0.0006	
Benzo(k)fluorantene	0.000 ± 0.0003	
Benzo(a)pyrene	0.000 ± 0.0002	
Indeno(123cd)pyrene	0.000 ± 0.0001	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0001	
Total PAHs	0.211 ± 0.0610	
Naphthalene	0..036 ± 0.0035	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.021 ± 0.0087	
Phenanthrene	0.066 ± 0.0053	
Antracene	0.001 ± 0.0015	
Fluorantene	0.011 ± 0.0029	EFB Malaysian Traditional stove (NTS)[4]
Pyrene	0.012 ± 0.0019	
Benz(a)antracene	0.000 ± 0.0001	
Chrysene	0.001 ± 0.0003	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	

Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0000	
Total PAHs	0.148 ± 0.0191	
Naphthalene	0.117 ± 0.0173	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.010 ± 0.0028	
Phenanthrene	0.162 ± 0.0680	
Antracene	0.000 ± 0.0000	
Fluorantene	0.027 ± 0.0021	
Pyrene	0.025 ± 0.0028	
Benz(a)antracene	0.001 ± 0.0001	EFB Top lit up draft (TLUD), 650 – 700 °C[4]
Chrysene	0.002 ± 0.0004	
Benzo[b]fluoranthene	0.000 ± 0.0000	
Benzo(k)fluorantene	0.000 ± 0.0000	
Benzo(a)pyrene	0.000 ± 0.0000	
Indeno(123cd)pyrene	0.000 ± 0.0000	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.000 ± 0.0003	
Total PAHs	0.344 ± 0.0932	
Naphthalene	0.046 ± 0.0050	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.003 ± 0.0051	
Phenanthrene	0.066 ± 0.0053	
Antracene	0.002 ± 0.0014	
Fluorantene	0.016 ± 0.0031	
Pyrene	0.019 ± 0.0028	
Benz(a)antracene	0.001 ± 0.0000	Coconut shell (CCS) TLUD[4]
Chrysene	0.002 ± 0.0002	
Benzo[b]fluoranthene	0.001 ± 0.0006	
Benzo(k)fluorantene	0.000 ± 0.0003	
Benzo(a)pyrene	0.001 ± 0.0009	
Indeno(123cd)pyrene	0.000 ± 0.0003	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.001 ± 0.0001	
Total PAHs	0.158 ± 0.0117	

Naphthalene	0.356 ± 0.0172	
Acenaphtylene	0.000 ± 0.0000	
Acenaphthene	0.000 ± 0.0000	
Fluorene	0.007 ± 0.0004	
Phenanthrene	0.124 ± 0.0089	
Antracene	0.008 ± 0.0011	
Fluorantene	0.018 ± 0.0017	
Pyrene	0.014 ± 0.0010	
Benz(a)antracene	0.003 ± 0.0001	CCS 3 stove[4]
Chrysene	0.005 ± 0.0003	
Benzo[b]fluoranthene	0.002 ± 0.0006	
Benzo(k)fluorantene	0.001 ± 0.0003	
Benzo(a)pyrene	0.001 ± 0.0001	
Indeno(123cd)pyrene	0.002 ± 0.0003	
Dibenz(ah)antracene	0.000 ± 0.0000	
Benzo(ghi)perylene	0.002 ± 0.0002	
Total PAHs	0.544 ± 0.0223	
Total tetra-octa chlorinated dioxin[4]	9.2×10^{-5}	Food waste, 400 °C
	8.4×10^{-5}	Food waste, 600 °C
	8.55×10^{-5}	Digested dairy manure, 600 °C
	9.15×10^{-5}	Pine wood, 900 °C
	8.6×10^{-5}	Lodge pole pine, 700-750 °C
Total 2,3,7,8-substitutes dioxin[4]	1.22×10^{-5}	Food waste, 400 °C
	7.5×10^{-6}	Food waste, 600 °C
	8.0×10^{-6}	Digested dairy manure, 600 °C
	1.07×10^{-5}	Pine wood, 900 °C
	1.05×10^{-5}	Lodge pole pine, 700-750 °C
	1.33×10^{-5}	Food waste, 300 °C
	3.9×10^{-7}	Food waste, 500 °C
	1.5×10^{-6}	Oak, 650 °C
	2.4×10^{-6}	Grass, 650 °C
	5.0×10^{-7}	Pine wood, 800 °C
	8.0×10^{-7}	Switch grass, 800 °C
	2.2×10^{-6}	Switch grass, 900
	6.0×10^{-7}	Paper mill waste, 600 °C
Total toxic dioxin[4]	1.5×10^{-7}	Food waste, 400 °C
	1.6×10^{-7}	Food waste, 600 °C
	1.3×10^{-7}	Digested dairy manure, 600 °C
	1.5×10^{-7}	Pine wood, 900 °C
	1.8×10^{-7}	Lodge pole pine, 700-750 °C
	1.2×10^{-6}	Food waste, 300 °C
	8.0×10^{-9}	Food waste, 500 °C
	2.0×10^{-8}	Oak, 650 °C

	2.0×10^{-8}	Grass, 650 °C
	5.0×10^{-9}	Pine wood, 800 °C
	8.0×10^{-9}	Switch grass, 800 °C
	2.2×10^{-7}	Switch grass, 900
	6.0×10^{-8}	Paper mill waste, 600 °C
naphthalene	5.941 ± 0.125	
acenaphthylene	0.038 ± 0.012	
acenaphthene	0.109 ± 0.010	
fluorene	0.611 ± 0.026	
phenanthrene	1.760 ± 0.080	
anthracene	0.419 ± 0.012	
fluoranthene	0.217 ± 0.022	
pyrene	0.252 ± 0.027	
benzo[a]anthracene	0.141 ± 0.016	Grapevine wood, 1 year old, 350-750 ºC[5]
chrysene	0.151 ± 0.025	
benzo[b]fluoranthene	0.022 ± 0.002	
benzo[k]fluoranthene	0.035 ± 0.004	
benzo[a]pyrene	0.061 ± 0.005	
indeno[1,2,3-cd]pyrene	0.037 ± 0.000	
dibenz[a,h]anthracene	0.001 ± 0.0003	
benzo[ghi]perylene	0.021 ± 0.001	
∑16 EPA PAH	9.818 ±0.116	
naphthalene	26.089 ± 2.779	
acenaphthylene	5.495 ± 0.671	
acenaphthene	0.498 ± 0.457	
fluorene	0.256 ± 0.330	
phenanthrene	9.509 ± 0.765	
anthracene	1.772 ± 0.245	
fluoranthene	6.628 ± 0.808	
pyrene	5.869 ± 0.577	
benzo[a]anthracene	0.940 ± 0.161	Miscanthus, 350-750 ºC[5]
chrysene	1.062 ± 0.184	
benzo[b]fluoranthene	0.856 ± 0.335	
benzo[k]fluoranthene	0.456 ± 0.243	
benzo[a]pyrene	1.432 ± 0.649	
indeno[1,2,3-cd]pyrene	0.690 ± 0.455	
dibenz[a,h]anthracene	0.051 ± 0.036	
benzo[ghi]perylene	1.128 ± 0.501	
∑16 EPA PAH	62.732 ± 5.938	
naphthalene	181.160 ± 29.134	Sieved coniferous wood residues, 350-750 ºC[5]

acenaphthylene	38.730 ± 1.046	
acenaphthene	1.699 ± 0.766	
fluorene	0.987 ± 0.761	
phenanthrene	48.836 ± 1.689	
anthracene	9.774 ± 0.431	
fluoranthene	31.527 ± 0.872	
pyrene	22.458 ± 0.635	
benzo[a]anthracene	4.416 ± 0.213	
chrysene	4.811 ± 0.362	
benzo[b]fluoranthene	3.600 ± 0.244	
benzo[k]fluoranthene	2.105 ± 0.203	
benzo[a]pyrene	4.711 ± 0.498	
indeno[1,2,3-cd]pyrene	3.152 ± 0.211	
dibenz[a,h]anthracene	0.238 ± 0.027	
benzo[ghi]perylene	2.821 ± 0.108	
∑16 EPA PAH	355.295 ± 30.902	
naphthalene	5.143 ± 0.249	Sieved deciduous and coniferous residues, 350-750 ºC[5]
acenaphthylene	0.367 ± 0.158	
acenaphthene	0.189 ± 0.159	
fluorene	0.089 ± 0.010	
phenanthrene	1.605 ± 0.083	
anthracene	0.330 ± 0.017	
fluoranthene	0.433 ± 0.025	
pyrene	0.355 ± 0.022	
benzo[a]anthracene	0.134 ± 0.025	
chrysene	0.169 ± 0.031	
benzo[b]fluoranthene	0.075 ± 0.042	
benzo[k]fluoranthene	0.053 ± 0.051	
benzo[a]pyrene	0.064 ± 0.029	
indeno[1,2,3-cd]pyrene	0.042 ± 0.031	
dibenz[a,h]anthracene	0.002 ± 0.003	
benzo[ghi]perylene	0.044 ± 0.026	
∑16 EPA PAH	9.113 ± 0.454	
phenanthrene	0.017	Grass, 100 ºC[6]
anthracene	0.004	
3-methylphenanthrene	0.002	
2-methylphenanthrene	0.003	
2-methylanthracene	n.d.	
4- and 9-methylphenanthrene	0.001	

1-methylphenanthrene	0.001	
1,7-dimethylphenanthrene	n.d.	
fluoranthene	0.003	
pyrene	0.003	
retene	0.002	
benz[a]anthracene	0.001	
chrysene	0.010	
benzofluoranthenes	0.002	
benzo[e]pyrene	0.002	
benzo[a]pyrene	n.d.	
indenopyrene	n.d.	
benzo[g,h,i]perylene	n.d.	
∑PAHs	0.050	
Sum of 'pyrolytic' PAHs without methylated derivatives	0.021	
Sum of phenanthrene and its methylated derivatives	0.025	
Sum of dimethylated phenanthrenes	n.d.	
Sum of trimethylated phenanthrenes	n.d.	
phenanthrene	0.023	Grass, 200 ºC[6]
anthracene	0.002	
3-methylphenanthrene	0.002	
2-methylphenanthrene	0.002	
2-methylanthracene	n.d.	
4- and 9-methylphenanthrene	0.001	
1-methylphenanthrene	0.001	
1,7-dimethylphenanthrene	n.d.	
fluoranthene	0.005	
pyrene	0.006	
retene	0.003	
benz[a]anthracene	0.002	
chrysene	0.401	
benzofluoranthenes	n.d.	
benzo[e]pyrene	0.001	
benzo[a]pyrene	0.002	
indenopyrene	n.d.	
benzo[g,h,i]perylene	n.d.	
∑PAHs	0.452	
Sum of 'pyrolytic' PAHs without	0.416	

methylated derivatives		
Sum of phenanthrene and its methylated derivatives	0.033	
Sum of dimethylated phenanthrenes	n.d.	
Sum of trimethylated phenanthrenes	n.d.	
phenanthrene	0.048	
anthracene	0.005	
3-methylphenanthrene	0.004	
2-methylphenanthrene	0.01	
2-methylanthracene	n.d.	
4- and 9-methylphenanthrene	0.006	
1-methylphenanthrene	0.006	
1,7-dimethylphenanthrene	0.0041	
fluoranthene	0.072	
pyrene	0.242	
retene	0.048	
benz[a]anthracene	0.028	
chrysene	0.216	Grass, 300 ºC[6]
benzofluoranthenes	0.005	
benzo[e]pyrene	0.006	
benzo[a]pyrene	n.d.	
indenopyrene	n.d.	
benzo[g,h,i]perylene	0.003	
∑PAHs	0.916	
Sum of 'pyrolytic' PAHs without methylated derivatives	0.572	
Sum of phenanthrene and its methylated derivatives	0.339	
Sum of dimethylated phenanthrenes	0.109	
Sum of trimethylated phenanthrenes	0.107	
phenanthrene	0.986	
anthracene	0.384	
3-methylphenanthrene	0.335	
2-methylphenanthrene	0.72	
2-methylanthracene	0.441	Grass, 400 ºC[6]
4- and 9-methylphenanthrene	0.56	
1-methylphenanthrene	0.613	
1,7-dimethylphenanthrene	0.837	
fluoranthene	0.512	

pyrene	0.689	
retene	0.099	
benz[a]anthracene	0.246	
chrysene	0.608	
benzofluoranthenes	0.229	
benzo[e]pyrene	0.294	
benzo[a]pyrene	0.165	
indenopyrene	0.179	
benzo[g,h,i]perylene	0.155	
∑PAHs	15.52	
Sum of 'pyrolytic' PAHs without methylated derivatives	3.08	
Sum of phenanthrene and its methylated derivatives	11.6	
Sum of dimethylated phenanthrenes	5.86	
Sum of trimethylated phenanthrenes	2.45	
phenanthrene	5.32	Grass, 500 ºC[6]
anthracene	1.3	
3-methylphenanthrene	0.445	
2-methylphenanthrene	0.757	
2-methylanthracene	0.16	
4- and 9-methylphenanthrene	0.197	
1-methylphenanthrene	0.333	
1,7-dimethylphenanthrene	0.281	
fluoranthene	2.081	
pyrene	2.15	
retene	0.011	
benz[a]anthracene	1.15	
chrysene	1.21	
benzofluoranthenes	4.03	
benzo[e]pyrene	2.15	
benzo[a]pyrene	0.976	
indenopyrene	1.54	
benzo[g,h,i]perylene	1.21	
∑PAHs	30.2	
Sum of 'pyrolytic' PAHs without methylated derivatives	16.5	
Sum of phenanthrene and its methylated derivatives	12.2	

Sum of dimethylated phenanthrenes	4.63	
Sum of trimethylated phenanthrenes	0.505	
phenanthrene	0.203	
anthracene	0.017	
3-methylphenanthrene	0.006	
2-methylphenanthrene	0.008	
2-methylanthracene	n.d.	
4- and 9-methylphenanthrene	0.005	
1-methylphenanthrene	0.004	
1,7-dimethylphenanthrene	0.002	
fluoranthene	0.103	
pyrene	0.236	
retene	0.006	
benz[a]anthracene	0.016	
chrysene	0.124	Grass, 600 ºC[6]
benzofluoranthenes	0.148	
benzo[e]pyrene	0.085	
benzo[a]pyrene	0.021	
indenopyrene	0.025	
benzo[g,h,i]perylene	0.032	
∑PAHs	1.04	
Sum of 'pyrolytic' PAHs without methylated derivatives	0.789	
Sum of phenanthrene and its methylated derivatives	0.232	
Sum of dimethylated phenanthrenes	n.d.	
Sum of trimethylated phenanthrenes	n.d.	
phenanthrene	0.074	
anthracene	n.d.	
3-methylphenanthrene	0.005	
2-methylphenanthrene	0.005	
2-methylanthracene	n.d.	
4- and 9-methylphenanthrene	n.d.	Grass, 700 ºC[6]
1-methylphenanthrene	n.d.	
1,7-dimethylphenanthrene	0.01	
fluoranthene	0.021	
pyrene	0.024	
retene	0.01	
benz[a]anthracene	0.007	

chrysene	0.006	
benzofluoranthenes	0.019	
benzo[e]pyrene	0.018	
benzo[a]pyrene	n.d.	
indenopyrene	n.d.	
benzo[g,h,i]perylene	n.d.	
∑PAHs	0.19	
Sum of 'pyrolytic' PAHs without methylated derivatives	0.095	
Sum of phenanthrene and its methylated derivatives	0.095	
Sum of dimethylated phenanthrenes	n.d.	
Sum of trimethylated phenanthrenes	n.d.	
phenanthrene	0.029	
anthracene	n.d.	
3-methylphenanthrene	0.002	
2-methylphenanthrene	0.003	
2-methylanthracene	n.d.	
4- and 9-methylphenanthrene	n.d.	
1-methylphenanthrene	n.d.	
1,7-dimethylphenanthrene	n.d.	
fluoranthene	0.007	
pyrene	0.029	
retene	0.031	
benz[a]anthracene	0.002	
chrysene	0.024	Wood, 100 ºC[6]
benzofluoranthenes	0.001	
benzo[e]pyrene	0.002	
benzo[a]pyrene	n.d.	
indenopyrene	n.d.	
benzo[g,h,i]perylene	n.d.	
∑PAHs	0.130	
Sum of 'pyrolytic' PAHs without methylated derivatives	0.066	
Sum of phenanthrene and its methylated derivatives	0.065	
Sum of dimethylated phenanthrenes	n.d.	
Sum of trimethylated phenanthrenes	n.d.	
phenanthrene	0.041	Wood, 200 ºC[6]

anthracene	0.004	
3-methylphenanthrene	0.004	
2-methylphenanthrene	0.006	
2-methylanthracene	n.d.	
4- and 9-methylphenanthrene	0.003	
1-methylphenanthrene	0.004	
1,7-dimethylphenanthrene	0.004	
fluoranthene	0.012	
pyrene	0.025	
retene	0.134	
benz[a]anthracene	0.002	
chrysene	0.092	
benzofluoranthenes	0.003	
benzo[e]pyrene	0.002	
benzo[a]pyrene	n.d.	
indenopyrene	n.d.	
benzo[g,h,i]perylene	n.d.	
∑PAHs	0.332	
Sum of 'pyrolytic' PAHs without methylated derivatives	0.137	
Sum of phenanthrene and its methylated derivatives	0.191	
Sum of dimethylated phenanthrenes	n.d.	
Sum of trimethylated phenanthrenes	n.d.	
phenanthrene	0.063	
anthracene	n.d.	
3-methylphenanthrene	0.003	
2-methylphenanthrene	0.003	
2-methylanthracene	n.d.	
4- and 9-methylphenanthrene	0.004	
1-methylphenanthrene	0.011	
1,7-dimethylphenanthrene	0.723	Wood, 300 ºC[6]
fluoranthene	0.007	
pyrene	0.011	
retene	7.28	
benz[a]anthracene	0.021	
chrysene	0.099	
benzofluoranthenes	0.002	
benzo[e]pyrene	0.002	

benzo[a]pyrene	0.001	
indenopyrene	n.d.	
benzo[g,h,i]perylene	n.d.	
∑PAHs	12	
Sum of 'pyrolytic' PAHs without methylated derivatives	0.143	
Sum of phenanthrene and its methylated derivatives	11.9	
Sum of dimethylated phenanthrenes	1.15	
Sum of trimethylated phenanthrenes	3.34	
phenanthrene	0.84	
anthracene	0.094	
3-methylphenanthrene	0.204	
2-methylphenanthrene	0.619	
2-methylanthracene	0.081	
4- and 9-methylphenanthrene	0.303	
1-methylphenanthrene	1.107	
1,7-dimethylphenanthrene	6.12	
fluoranthene	0.175	
pyrene	0.296	
retene	4.96	
benz[a]anthracene	0.203	
chrysene	0.462	Wood, 400 ºC[6]
benzofluoranthenes	0.162	
benzo[e]pyrene	0.211	
benzo[a]pyrene	0.082	
indenopyrene	0.06	
benzo[g,h,i]perylene	0.076	
∑PAHs	26.6	
Sum of 'pyrolytic' PAHs without methylated derivatives	1.73	
Sum of phenanthrene and its methylated derivatives	24.7	
Sum of dimethylated phenanthrenes	9.95	
Sum of trimethylated phenanthrenes	6.76	
phenanthrene	2.08	
anthracene	0.294	Wood, 500 ºC[6]
3-methylphenanthrene	0.161	
2-methylphenanthrene	0.319	

2-methylanthracene	0.047	
4- and 9-methylphenanthrene	0.094	
1-methylphenanthrene	0.212	
1,7-dimethylphenanthrene	0.165	
fluoranthene	0.315	
pyrene	0.639	
retene	0.008	
benz[a]anthracene	0.389	
chrysene	0.509	
benzofluoranthenes	0.59	
benzo[e]pyrene	0.595	
benzo[a]pyrene	0.203	
indenopyrene	0.26	
benzo[g,h,i]perylene	0.297	
∑PAHs	8.03	
Sum of 'pyrolytic' PAHs without methylated derivatives	3.8	
Sum of phenanthrene and its methylated derivatives	3.9	
Sum of dimethylated phenanthrenes	0.851	
Sum of trimethylated phenanthrenes	0.169	
phenanthrene	0.191	Wood, 600 ºC[6]
anthracene	0.014	
3-methylphenanthrene	0.005	
2-methylphenanthrene	0.005	
2-methylanthracene	n.d.	
4- and 9-methylphenanthrene	0.006	
1-methylphenanthrene	0.005	
1,7-dimethylphenanthrene	0.003	
fluoranthene	0.055	
pyrene	0.095	
retene	0.009	
benz[a]anthracene	0.019	
chrysene	0.131	
benzofluoranthenes	0.121	
benzo[e]pyrene	0.08	
benzo[a]pyrene	0.015	
indenopyrene	0.024	
benzo[g,h,i]perylene	0.026	

∑PAHs	0.801	
Sum of 'pyrolytic' PAHs without methylated derivatives	0.566	
Sum of phenanthrene and its methylated derivatives	0.221	
Sum of dimethylated phenanthrenes	n.d.	
Sum of trimethylated phenanthrenes	n.d.	
phenanthrene	0.046	
anthracene	0.006	
3-methylphenanthrene	n.d.	
2-methylphenanthrene	n.d.	
2-methylanthracene	n.d.	
4- and 9-methylphenanthrene	n.d.	
1-methylphenanthrene	n.d.	
1,7-dimethylphenanthrene	n.d.	
fluoranthene	0.012	
pyrene	0.018	
retene	0.008	
benz[a]anthracene	0.043	
chrysene	0.239	Wood, 700 ºC[6]
benzofluoranthenes	n.d.	
benzo[e]pyrene	n.d.	
benzo[a]pyrene	n.d.	
indenopyrene	n.d.	
benzo[g,h,i]perylene	n.d.	
∑PAHs	0.373	
Sum of 'pyrolytic' PAHs without methylated derivatives	0.313	
Sum of phenanthrene and its methylated derivatives	0.054	
Sum of dimethylated phenanthrenes	n.d.	
Sum of trimethylated phenanthrenes	n.d.	
Naphthalene	27.100±1.800	
Acenaphthylene	5.265±0.265	
Acenaphthene	2.140±0.030	
Fluorene	6.415±0.345	
Phenenthrene	9.920±0.380	Rice husk, 450 ºC[7]
Anthracene	3.235±0.145	
Fluoranthene	3.145±0.135	
Pyrene	3.720±0.180	
Benz(a)anthracene	1.001±0.079	

Chrysene	0.968±0.082	
Benzo(b)fluoranthene	0.619±0.093	
Benzo(k)fluoranthene	0.115±0.009	
Benzo(a)pyrene	0.556±0.074	
Indenol(1,2,3-cd)pyrene	0.160±0.028	
Dibenzo(a,h)anthracene	0.064±0.009	
Benzo(g,h,i)perylene	0.188±0.029	
Total PAH (USEPA 16)	64.650±3.650	
Naphthalene	6.683±0.332	Wood, 450 ºC[7]
Acenaphthylene	0.774±0.133	
Acenaphthene	0.214±0.025	
Fluorene	0.237±0.011	
Phenenthrene	0.789±0.191	
Anthracene	0.144±0.034	
Fluoranthene	0.269±0.061	
Pyrene	0.314±0.068	
Benz(a)anthracene	0.040±0.009	
Chrysene	0.031±0.010	
Benzo(b)fluoranthene	0.040±0.004	
Benzo(k)fluoranthene	n.d.	
Benzo(a)pyrene	0.023±0.004	
Indenol(1,2,3-cd)pyrene	n.d.	
Dibenzo(a,h)anthracene	n.d.	
Benzo(g,h,i)perylene	n.d.	
Total PAH (USEPA 16)	9.556±0.722	
naphthalene	0.10047±0.081	Koszalin sewage sludges, 500 ºC[8]
acenaphthylene	0.00835±0.00066	
acenaphthene	0.10476±0.00799	
fluorene	0.05760±0.00605	
phenanthrene	0.18806±0.01880	
anthracene	0.04031±0.00372	
fluoranthene	0.04970±0.00494	
pyrene	0.03881±0.00412	
benzo[a]anthracene	0.03973±0.00380	
chrysene	0.03738±0.00374	
benzo[b]fluoranthene	0.05244±0.00573	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.04828±0.00417	
indeno[1,2,3-cd]pyrene	n.d.	
dibenz[a,h]anthracene	n.d.	
benzo[ghi]perylene	n.d.	
naphthalene	0.11503±0.01236	Koszalin sewage sludges, 600 ºC[8]
acenaphthylene	0.00858±0.00079	

acenaphthene	0.09490±0.00932	
fluorene	0.07347±0.00586	
phenanthrene	0.27237±0.02752	
anthracene	0.05137±0.00576	
fluoranthene	0.08260±0.00784	
pyrene	0.05460±0.00614	
benzo[a]anthracene	0.04862±0.00561	
chrysene	0.04542±0.00420	
benzo[b]fluoranthene	0.06395±0.00566	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.05726±0.00516	
indeno[1,2,3-cd]pyrene	0.00939±0.00092	
dibenz[a,h]anthracene	n.d.	
benzo[ghi]perylene	n.d.	
naphthalene	0.08049±0.00798	Koszalin sewage sludges, 700 ºC[8]
acenaphthylene	0.01534±0.00135	
acenaphthene	0.07221±0.00614	
fluorene	0.08735±0.00958	
phenanthrene	0.24115±0.02120	
anthracene	0.06171±0.00594	
fluoranthene	0.08507±0.00941	
pyrene	0.06398±0.00545	
benzo[a]anthracene	0.06194±0.00651	
chrysene	0.05856±0.00555	
benzo[b]fluoranthene	0.08010±0.00660	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.09036±0.00909	
indeno[1,2,3-cd]pyrene	0.01862±0.00212	
dibenz[a,h]anthracene	n.d.	
benzo[ghi]perylene	n.d.	
naphthalene	0.02408±0.00229	Kalisa sewage sludges, 500 ºC[8]
acenaphthylene	0.00357±0.00038	
acenaphthene	0.5955±0.00532	
fluorene	0.06027±0.00659	
phenanthrene	0.16889±0.01677	
anthracene	0.05480±0.00567	
fluoranthene	0.05409±0.00539	
pyrene	0.04647±0.00510	
benzo[a]anthracene	0.05699±0.00486	

chrysene	0.05244±0.0058	
benzo[b]fluoranthene	n.d.	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.08475±0.00945	
indeno[1,2,3-cd]pyrene	n.d.	
dibenz[a,h]anthracene	n.d.	
benzo[ghi]perylene	n.d.	
naphthalene	0.05124±0.00588	Kalisa sewage sludges, 600 ºC[8]
acenaphthylene	0.00464±0.00038	
acenaphthene	0.06661±0.00692	
fluorene	0.05306±0.00573	
phenanthrene	0.11802±0.01021	
anthracene	0.04333±0.00468	
fluoranthene	0.03651±0.00269	
pyrene	0.03819±0.00386	
benzo[a]anthracene	0.04352±0.00483	
chrysene	0.03995±0.00411	
benzo[b]fluoranthene	0.05823±0.00606	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.063.24±0.00596	
indeno[1,2,3-cd]pyrene	n.d.	
dibenz[a,h]anthracene	n.d.	
benzo[ghi]perylene	n.d.	
naphthalene	0.03064±0.00354	Kalisa sewage sludges, 700 ºC[8]
acenaphthylene	0.00212±0.00023	
acenaphthene	0.06242±0.00537	
fluorene	0.04054±0.00346	
phenanthrene	0.08633±0.00905	
anthracene	0.03177±0.00302	
fluoranthene	0.02663±0.00244	
pyrene	0.03268±0.00320	
benzo[a]anthracene	0.03433±0.00366	
chrysene	0.03200±0.00358	
benzo[b]fluoranthene	0.04747±0.00441	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.05241±0.00569	
indeno[1,2,3-cd]pyrene	0.00853±0.00079	
dibenz[a,h]anthracene	n.d.	
benzo[ghi]perylene	n.d.	

naphthalene	0.08919±0.00835	Chelm sewage sludges, 500 ºC[8]
acenaphthylene	0.00260±0.00028	
acenaphthene	0.06366±0.00597	
fluorene	0.04804±0.00451	
phenanthrene	0.08052±0.00813	
anthracene	0.04281±0.00483	
fluoranthene	0.04196±0.00364	
pyrene	0.03587±0.00334	
benzo[a]anthracene	0.04403±0.00424	
chrysene	0.04047±0.00430	
benzo[b]fluoranthene	n.d.	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.05606±0.00623	
indeno[1,2,3-cd]pyrene	n.d.	
dibenz[a,h]anthracene	n.d.	
benzo[ghi]perylene	0.01527±0.00148	
naphthalene	0.07426±0.00609	Chelm sewage sludges, 600 ºC[8]
acenaphthylene	0.00473±0.00047	
acenaphthene	0.06261±0.00698	
fluorene	0.04824±0.00482	
phenanthrene	0.10358±0.00980	
anthracene	0.03810±0.00427	
fluoranthene	n.d.	
pyrene	0.03522±0.00293	
benzo[a]anthracene	0.03940±0.00365	
chrysene	0.03644±0.00306	
benzo[b]fluoranthene	n.d.	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.11056±0.01279	
indeno[1,2,3-cd]pyrene	n.d.	
dibenz[a,h]anthracene	n.d.	
benzo[ghi]perylene	0.01336±0.00149	
naphthalene	0.08860±0.00989	Chelm sewage sludges, 700 ºC[8]
acenaphthylene	n.d.	
acenaphthene	0.07117±0.00706	
fluorene	0.05600±0.00621	
phenanthrene	0.12526±0.01049	
anthracene	0.04842±0.00535	
fluoranthene	0.06813±0.00732	

pyrene	0.05605±0.00550	
benzo[a]anthracene	0.07179±0.00798	
chrysene	0.07344±0.00671	
benzo[b]fluoranthene	0.11033±0.01100	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.09216±0.00870	
indeno[1,2,3-cd]pyrene	0.05799±0.00547	
dibenz[a,h]anthracene	n.d.	
benzo[ghi]perylene	0.01336±0.00121	
naphthalene	0.09688±0.00804	Suwalki sewage sludges, 500 ºC[8]
acenaphthylene	0.00465±0.00040	
acenaphthene	0.07900±0.00901	
fluorene	0.05329±0.00538	
phenanthrene	0.08524±0.00681	
anthracene	0.04761±0.00520	
fluoranthene	0.04919±0.00410	
pyrene	0.04099±0.00380	
benzo[a]anthracene	0.04835±0.00529	
chrysene	0.04451±0.00463	
benzo[b]fluoranthene	n.d.	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.06180±0.00557	
indeno[1,2,3-cd]pyrene	n.d.	
dibenz[a,h]anthracene	n.d.	
benzo[ghi]perylene	n.d.	
naphthalene	0.10449±0.01144	Suwalki sewage sludges, 600 ºC[8]
acenaphthylene	0.00503±0.00047	
acenaphthene	0.08012±0.00624	
fluorene	0.05475±0.00533	
phenanthrene	0.11648±0.01341	
anthracene	0.04912±0.00501	
fluoranthene	0.05217±0.00569	
pyrene	0.04235±0.00311	
benzo[a]anthracene	0.04878±0.00432	
chrysene	0.04470±0.00422	
benzo[b]fluoranthene	n.d.	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.06806±0.00766	
indeno[1,2,3-cd]pyrene	n.d.	

dibenz[a,h]anthracene	n.d.	
benzo[ghi]perylene	n.d.	
naphthalene	0.08174±0.00920	Suwalki sewage sludges, 700 ºC[8]
acenaphthylene	0.00526±0.00060	
acenaphthene	0.00245±0.00723	
fluorene	0.04902±0.00416	
phenanthrene	0.09558±0.0080	
anthracene	0.04294±0.00366	
fluoranthene	0.09061±0.01004	
pyrene	0.08547±0.00891	
benzo[a]anthracene	0.06639±0.00583	
chrysene	0.10868±0.00997	
benzo[b]fluoranthene	n.d.	
benzo[k]fluoranthene	n.d.	
benzo[a]pyrene	0.35482±0.02661	
indeno[1,2,3-cd]pyrene	0.05281±0.00527	
dibenz[a,h]anthracene	n.d.	
benzo[ghi]perylene	0.01208±0.00132	

*: n.d.: not detected.

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