

APPENDIX 4

Moisture, ash and volatile matter contents and elemental composition of original coals and carbonaceous shales, and after hydrous pyrolysis experiments at 330 and 360 °C for 72 h

Sample code	HP temp. [°C]	Moisture ^a [wt.%]	Ash ^a [wt.%]	Volatile matter ^{daf} [wt.%]	Elemental composition [wt.%, daf]					Atomic ratios			
					C	H	O	N	S	H/C	O/C	N/C	S/C
Upper Silesian Coal Basin													
Si-23st	Initial	n.a.	n.a.	n.a.	73.9	3.6	20.2	1.8	0.5	0.59	0.205	0.021	0.0026
	330	n.a.	n.a.	n.a.	79.8	3.3	14.5	2.0	0.4	0.49	0.136	0.022	0.0018
	360	n.a.	n.a.	n.a.	80.3	3.2	14.1	2.0	0.4	0.48	0.132	0.022	0.0019
Si-23c	Initial	3.8	8.5	33.3	77.5	4.9	15.7	1.7	0.2	0.76	0.152	0.019	0.0011
	330	1.3	7.1	22.9	83.4	4.0	10.6	1.9	0.1	0.58	0.095	0.020	0.0002
	360	1.4	4.7	19.5	83.9	3.6	10.4	1.9	0.2	0.52	0.093	0.019	0.0010
Ml-21c	Initial	1.9	4.7	31.7	80.2	4.8	13.2	1.5	0.3	0.72	0.123	0.016	0.0015
	330	1.1	4.2	20.3	83.7	4.0	10.7	1.6	0.0	0.57	0.096	0.016	0.0001
	360	2.0	4.7	13.9	84.2	3.4	10.9	1.5	0.0	0.49	0.097	0.016	0.0000
Ml-21sb	Initial	n.a.	n.a.	n.a.	80.0	3.8	14.5	1.6	0.1	0.57	0.136	0.018	0.0005
	330	n.a.	n.a.	n.a.	80.2	3.7	14.4	1.7	0.1	0.55	0.134	0.018	0.0007
	360	n.a.	n.a.	n.a.	81.5	3.4	13.3	1.7	0.1	0.50	0.123	0.018	0.0005
Si-22st	Initial	n.a.	n.a.	n.a.	76.1	4.4	16.2	1.9	1.4	0.70	0.160	0.021	0.0070
	330	n.a.	n.a.	n.a.	80.5	3.5	12.7	2.0	1.3	0.52	0.118	0.021	0.0063
	360	n.a.	n.a.	n.a.	80.9	2.7	13.4	2.0	1.1	0.40	0.124	0.021	0.0053
Si-22c	Initial	3.5	17.7	32.1	76.7	5.0	16.3	1.7	0.2	0.79	0.159	0.019	0.0009
	330	1.7	19.6	20.5	81.1	4.1	12.6	1.9	0.4	0.60	0.117	0.020	0.0017
	360	1.3	15.1	15.5	84.5	3.5	9.8	1.9	0.3	0.49	0.087	0.020	0.0014
Br-20st	Initial	n.a.	n.a.	n.a.	74.8	3.8	19.2	1.6	0.5	0.60	0.193	0.019	0.0027
	330	n.a.	n.a.	n.a.	80.1	3.4	14.4	1.8	0.3	0.52	0.135	0.019	0.0015
	360	n.a.	n.a.	n.a.	79.4	3.1	15.6	1.7	0.3	0.46	0.147	0.019	0.0013
Br-20c	Initial	2.1	2.3	33.0	79.0	4.7	14.4	1.5	0.4	0.72	0.137	0.016	0.0021
	330	1.0	2.2	21.5	84.7	3.9	9.4	1.6	0.4	0.56	0.083	0.017	0.0017
	360	1.7	2.3	14.2	85.8	3.3	8.9	1.6	0.3	0.47	0.078	0.016	0.0014
Br-23c	Initial	1.8	6.1	27.8	82.0	4.6	11.9	1.5	0.1	0.67	0.109	0.015	0.0003
	330	2.2	5.3	21.1	83.7	3.9	10.9	1.5	0.0	0.56	0.098	0.015	0.0001
	360	1.6	6.7	17.7	84.3	3.6	10.4	1.5	0.2	0.52	0.092	0.015	0.0009
Br-23sb	Initial	n.a.	n.a.	n.a.	80.6	3.2	14.7	1.5	0.0	0.47	0.137	0.016	0.0002
	330	n.a.	n.a.	n.a.	82.8	2.8	12.7	1.6	0.1	0.41	0.115	0.017	0.0003
	360	n.a.	n.a.	n.a.	80.8	2.8	14.7	1.6	0.0	0.42	0.136	0.017	0.0000
Lublin Coal Basin													
Bo-20c	Initial	3.4	11.4	30.9	79.6	4.6	13.5	1.9	0.4	0.69	0.127	0.021	0.0018
	330	1.6	14.1	21.8	82.0	3.8	11.9	2.0	0.3	0.55	0.109	0.021	0.0013
	360	1.7	12.7	18.1	84.9	3.5	9.3	2.1	0.3	0.49	0.082	0.021	0.0013
Bo-20sb	Initial	n.a.	n.a.	n.a.	76.9	3.7	16.7	2.4	0.3	0.58	0.163	0.027	0.0016
	330	n.a.	n.a.	n.a.	82.0	3.8	11.9	2.0	0.3	0.55	0.109	0.021	0.0013
	360	n.a.	n.a.	n.a.	84.9	3.5	9.3	2.1	0.3	0.49	0.082	0.021	0.0013

HP temp. – hydrous pyrolysis temperature; ^a – analytical basis; ^{daf} – dry-ash-free basis; n.a. – not analysed; c – channel coal sample; st – block shale sample collected above coal seam; sb – block shale sample collected below coal seam