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APPENDIX

Supplementary Results

Table 1 Gas adsorption capacities (pilot gasification unit): Retention time, area, percentage and adsorption (mmol/min, mmol/g) of the neat poly(DVB)HIPes with mixed surfactant 7s

Sample	Time	Area	% CO ₂	Adsorption			
Blank 1	8.251	89036.7	22.35698682	16.76774011		area of CO ₂ standard	3982.5
Blank 2	8.236	89660.2	22.51354677	16.88516008		retention time of CO ₂	8.3
Blank 3	8.221	91606.1	23.00215945	17.25161959			
Average				16.96817326			
DVB 1	8.223	80725.91	20.27015848	15.20261886	1.7655544		
DVB 2	8.218	86086.99	21.61631954	16.21223966	0.7559336		
DVB 3	8.221	88472.64	22.21535341	16.66151506	0.3066582		
DVB 4	8.222	88951.15	22.33550554	16.75162916	0.2165441		
DVB 5	8.224	89152.91	22.38616821	16.78962616	0.1785471		
				Sum	3.2232374		

Table 2 Gas adsorption capacities (pilot gasification unit): Retention time, area, percentage and adsorption (mmol/min, mmol/g) of the MAPES 2.5 %wt polyHIPes with mixed surfactant 7s

Sample	Time	Area	% CO ₂	Adsorption			
Blank 1	8.251	89036.7	22.35698682	16.76774011		area of CO ₂ standard	3982.5
Blank 2	8.236	89660.2	22.51354677	16.88516008		retention time of CO ₂	8.3
Blank 3	8.221	91606.1	23.00215945	17.25161959			
Average				16.96817326			
MAPES2.5 1	8.221	80305.9	20.16469434	15.12352076	1.8446525		
MAPES2.5 2	8.218	85913.84	21.57284181	16.17963136	0.7885419		
MAPES2.5 3	8.216	88250	22.15944674	16.61958506	0.3485882		
MAPES2.5 4	8.22	89118.89	22.37762421	16.78321816	0.1849551		
MAPES2.5 5	8.219	89289.11	22.42036754	16.81527566	0.1528976		
				Sum	3.3196353		

Table 3 Gas adsorption capacities (pilot gasification unit): Retention time, area, percentage and adsorption (mmol/min, mmol/g) of the MAPES 5 %wt polyHIPES with mixed surfactant 7s

Sample	Time	Area	% CO ₂	Adsorption			
Blank 1	8.251	89036.7	22.35698682	16.76774011		area of CO ₂ standard	3982.5
Blank 2	8.236	89660.2	22.51354677	16.88516008		retention time of CO ₂	8.3
Blank 3	8.221	91606.1	23.00215945	17.25161959			
Average				16.96817326			
MAPES5 1	8.223	80136.28	20.12210421	15.09157816	1.8765951		
MAPES5 2	8.218	83910.13	21.06971208	15.80228406	1.1658892		
MAPES5 3	8.221	87333.77	21.92938381	16.44703786	0.5211354		
MAPES5 4	8.222	89450.45	22.46087981	16.84565986	0.1225134		
MAPES5 5	8.224	89607.71	22.50036754	16.87527566	0.0928976		
				Sum	3.7790307		

Table 4 Gas adsorption capacities (pilot gasification unit): Retention time, area, percentage and adsorption (mmol/min, mmol/g) of the MAPES 10 %wt polyHIPES with mixed surfactant 7s

Sample	Time	Area	% CO ₂	Adsorption			
Blank 1	8.285	88600.27	22.24739973	16.6855498		area of CO ₂ standard	3982.5
Blank 2	8.279	87540.48	21.98128827	16.4859662		retention time of CO ₂	8.3
Blank 3	8.261	89030.55	22.3554428	16.7665821			
Average				16.6460377			
MAPES10 1	8.254	77815.79	19.5394324	14.6545743	1.9914584		
MAPES10 2	8.248	80118.4	20.1176144	15.0882108	1.5578219		
MAPES10 3	8.251	86677.62	21.764624	16.323468	0.3225647		
MAPES10 4	8.25	87564.74	21.98738027	16.4905352	0.1554975		
MAPES10 5	8.253	87882.04	22.0670536	16.5502902	0.0957425		
				Sum	4.123085		

Table 5 Gas adsorption capacities (pilot gasification unit): Retention time, area, percentage and adsorption (mmol/min, mmol/g) of the MAPES 20 %wt polyHIPEs with mixed surfactant 7s

Sample	Time	Area	% CO ₂	Adsorption			
Blank 1	8.285	88600.27	22.24739973	16.6855498		area of CO ₂ standard	3982.5
Blank 2	8.279	87540.48	21.98128827	16.4859662		retention time of CO ₂	8.3
Blank 3	8.261	89030.55	22.3554428	16.7665821			
Average				16.6460127			
MAPES20 1	8.246	77847.56	19.54740867	14.6605565	1.9854762		
MAPES20 2	8.244	80590.59	20.23618013	15.1771351	1.4688976		
MAPES20 3	8.239	85600.83	21.494244	16.120683	0.5253497		
MAPES20 4	8.238	86972.94	21.83877867	16.379084	0.2669487		
MAPES20 5	8.236	87856.64	22.06067547	16.5455066	0.1005261		
				Sum	4.3471983		

Table 6 Gas adsorption capacities (pilot gasification unit): Retention time, area, percentage and adsorption (mmol/min, mmol/g) of the MAPES 30 %wt polyHIPEs with mixed surfactant 7s

Sample	Time	Area	% CO ₂	Adsorption			
Blank 1	8.285	88600.27	22.24739973	16.6855498		area of CO ₂ standard	3982.5
Blank 2	8.279	87540.48	21.98128827	16.4859662		retention time of CO ₂	8.3
Blank 3	8.261	89030.55	22.3554428	16.7665821			
Average				16.6460127			
MAPES30 1	8.246	77753.1	19.5236904	14.6427678	2.0032649		
MAPES30 2	8.244	81692.22	20.5127988	15.3845991	1.2614336		
MAPES30 3	8.239	85210.42	21.3962124	16.0471593	0.5988734		
MAPES30 4	8.238	86480.7	21.71517853	16.2863839	0.3596488		
MAPES30 5	8.236	87866.59	22.06317413	16.5473806	0.0986521		
				Sum	4.3218728		

Table 7 Gas adsorption capacities (pilot gasification unit): Retention time, area, percentage and adsorption (mmol/min, mmol/g) of the neat poly(DVB)HIPES with mixed surfactant 12s

Sample	Time	Area	% CO ₂	Adsorption			
Blank 1	8.226	91463.06	22.96624	17.2246813		area of CO ₂ standard	3982.5
Blank 2	8.223	89446.87	22.45998	16.8449855		retention time of CO ₂	8.3
Blank 3	8.219	89998.21	22.59842	16.9488154			
Average				17.00616073			
DVB 1	8.246	81302.89	20.41504	15.31127843	1.6948823		
DVB 2	8.244	86593.99	21.74363	16.30771883	0.6984419		
DVB 3	8.239	88733.79	22.28093	16.71069423	0.2954665		
DVB 4	8.238	89355.15	22.43695	16.82771193	0.1784488		
DVB 5	8.236	89672.67	22.51668	16.88750863	0.1186521		
				Sum	2.9858916		

Table 8 Gas adsorption capacities (pilot gasification unit): Retention time, area, percentage and adsorption (mmol/min, mmol/g) of the MAPES 2.5 %wt polyHIPES with mixed surfactant 12s

Sample	Time	Area	% CO ₂	Adsorption			
Blank 1	8.226	91463.06	22.96624	17.2246813		area of CO ₂ standard	3982.5
Blank 2	8.223	89446.87	22.45998	16.8449855		retention time of CO ₂	8.3
Blank 3	8.219	89998.21	22.59842	16.9488154			
Average				17.00616073			
MAPES2.5 1	8.226	80981.04	20.33422	15.25066743	1.7554933		
MAPES2.5 2	8.224	85934.87	21.57812	16.18359163	0.8225691		
MAPES2.5 3	8.225	88573.81	22.24075	16.68056603	0.3255947		
MAPES2.5 4	8.222	89718.84	22.52827	16.89620293	0.1099578		
MAPES2.5 5	8.22	89824.46	22.55479	16.91609493	0.0900658		
				Sum	3.11036807		

Table 9 Gas adsorption capacities (pilot gasification unit): Retention time, area, percentage and adsorption (mmol/min, mmol/g) of the MAPES 5 %wt polyHIPes with mixed surfactant 12s

Sample	Time	Area	% CO ₂	Adsorption			
Blank 1	8.226	91463.06	22.96624	17.2246813		area of CO ₂ standard	3982.5
Blank 2	8.223	89446.87	22.45998	16.8449855		retention time of CO ₂	8.3
Blank 3	8.219	89998.21	22.59842	16.9488154			
Average				17.00616073			
MAPES5 1	8.281	80827.58	20.29569	15.22176603	1.7843947		
MAPES5 2	8.276	84957.69	21.33275	15.99956423	1.0065965		
MAPES5 3	8.274	87247.16	21.90764	16.43072783	0.5754329		
MAPES5 4	8.272	89795.38	22.54749	16.91061843	0.0955423		
MAPES5 5	8.277	89824.46	22.55479	16.91609493	0.0900658		
				Sum	3.5520322		

Table 10 Gas adsorption capacities (pilot gasification unit): Retention time, area, percentage and adsorption (mmol/min, mmol/g) of the MAPES 10 %wt polyHIPes with mixed surfactant 12s

Sample	Time	Area	% CO ₂	Adsorption			
Blank 1	8.239	91463.06	22.96624	17.2246813		area of CO ₂ standard	3982.5
Blank 2	8.24	89446.87	22.45998	16.8449855		retention time of CO ₂	8.3
Blank 3	8.237	89998.21	22.59842	16.9488154			
Average				17.00616073			
MAPES10 1	8.235	80396.64	20.18748	15.14061103	1.8655497		
MAPES10 2	8.234	84957.71	21.33276	15.99956843	1.0065923		
MAPES10 3	8.23	86800.35	21.79544	16.34658253	0.6595782		
MAPES10 4	8.236	89955.18	22.58761	16.94071103	0.0654497		
MAPES10 5	8.234	89850.3	22.56128	16.92096063	0.0852001		
				Sum	3.68237		

Table 11 Gas adsorption capacities (pilot gasification unit): Retention time, area, percentage and adsorption (mmol/min, mmol/g) of the MAPES 20 %wt polyHIPes with mixed surfactant 12s

Sample	Time	Area	% CO ₂	Adsorption			
Blank 1	8.239	91463.06	22.96624	17.2246813		area of CO ₂ standard	3982.5
Blank 2	8.24	89446.87	22.45998	16.8449855		retention time of CO ₂	8.3
Blank 3	8.237	89998.21	22.59842	16.9488154			
Average				17.00616073			
MAPES20 1	8.229	80965.1	20.33022	15.24766453	1.7584962		
MAPES20 2	8.231	84483.77	21.21375	15.91031443	1.0958463		
MAPES20 3	8.227	86295.28	21.66862	16.25146533	0.7546954		
MAPES20 4	8.228	90060.64	22.6141	16.96057163	0.0455891		
MAPES20 5	8.23	89954.48	22.58744	16.94058093	0.0655798		
				Sum	3.7202068		

Table 12 Gas adsorption capacities (pilot gasification unit): Retention time, area, percentage and adsorption (mmol/min, mmol/g) of the MAPES 30 %wt polyHIPes with mixed surfactant 12s

Sample	Time	Area	% CO ₂	Adsorption			
Blank 1	8.239	91463.06	22.96624	17.2246813		area of CO ₂ standard	3982.5
Blank 2	8.24	89446.87	22.45998	16.8449855		retention time of CO ₂	8.3
Blank 3	8.237	89998.21	22.59842	16.9488154			
Average				17.00616073			
MAPES30 1	8.226	81297.63	20.41372	15.31028843	1.6958723		
MAPES30 2	8.223	84538.89	21.22759	15.92069423	1.0854665		
MAPES30 3	8.225	86048.03	21.60654	16.20490133	0.8012594		
MAPES30 4	8.222	90118.64	22.62866	16.97149483	0.0346659		
MAPES30 5	8.224	89925.02	22.58004	16.93503133	0.0711294		
				Sum	3.6883935		

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