

Supporting Information

Split-Flow Thin (SPLITT) Cell Separations Operating Under Sink-Float Mode Using Centrifugal and Gravitational Fields

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Tables of PS and PMMA particle counts taken from electron micrographs along with calculated number fractions for data plotted in Figures 5, 6 and 7. The Print Numbers refer to the catalog numbers assigned during micrograph collection.

A. Number Fraction Data for Figures 5(a) and 5(b)

Feed particle mixture		# PMMA	# PS	Total #	PMMA	PS
Print Nos.	No of prints	N2(i)	N1(i)	N	f2(i)	f1(i)
31702/03/04	3	781	833	1614	0.48	0.52

Figure 5(a): Field = 42.8 g; Flow Rate= 0.85 mL/min

Flow Ratio	Outlet a		# PMMA	# PS	Total #	PMMA	PS
Vb/V	Print Nos.	No of prints	N2(a)	N1(a)	N	f2(a)	f1(a)
0.150	31700/01	2	187	759	946	0.20	0.80
0.260	31613	1	101	611	712	0.14	0.86
0.290	31625	1	102	675	777	0.13	0.87
0.470	31610/11	2	44	704	748	0.06	0.94
0.500	31615	1	24	609	633	0.04	0.96
0.580	31617	1	14	609	623	0.02	0.98
0.610	31626/27	2	23	625	648	0.03	0.97
0.650	31618/19	2	11	584	595	0.02	0.98

Flow Ratio	Outlet b		# PMMA	# PS	Total #	PMMA	PS
Vb/V	Print No	No of prints	N2(b)	N1(b)	N	f2(b)	f1(b)
0.150	31630/31	2	711	16	727	0.98	0.02
0.260	31602	1	969	44	1013	0.96	0.04
0.290	31620	1	535	36	571	0.94	0.06
0.470	31600/01	2	949	148	1097	0.87	0.13
0.500	31605	1	525	81	606	0.87	0.13
0.580	31606	1	558	122	680	0.82	0.18
0.610	31623	1	507	120	627	0.81	0.19
0.650	31608	1	762	212	974	0.78	0.22

Figure 5(b): Field = 61.6 g; Flow rate= 0.85 mL/min

Flow Ratio	Outlet a		# PMMA	# PS	Total #	PMMA	PS
	Print Nos.	No of prints					
0.216	50414	1	99	656	755	0.13	0.87
0.327	50435	1	36	598	634	0.06	0.94
0.417	50418	1	48	729	777	0.06	0.94
0.540	50419	1	24	703	727	0.03	0.97
0.613	50421	1	16	981	997	0.02	0.98
0.695	50424	1	4	667	671	0.01	0.99
0.715	50426	1	8	712	720	0.01	0.99

Flow Ratio	Outlet b		# PMMA	# PS	Total #	PMMA	PS
	Print No	No of prints					
0.216	No number	1	1050	53	1103	0.95	0.05
0.327	50430	1	1410	61	1471	0.96	0.04
0.417	51301/02	2	869	112	981	0.89	0.11
0.540	50405	1	638	144	782	0.82	0.18
0.613	50407	1	651	162	813	0.80	0.20
0.695	50409	1	493	146	639	0.77	0.23
0.715	50411	1	965	259	1224	0.79	0.21

B. Number Fraction Data for Figures 6(a) and 6(b)

Feed particle mixture		# PMMA	# PS	Total #	PMMA	PS
Print Nos.	No of prints	N2(i)	N1(i)	N	f2(i)	f1(i)
10903/04	2	692	1117	1809	0.38	0.62

Figure 6(a): Field = 42.8 g; Flow rate= 0.85 mL/min

Flow Ratio	Outlet a		# PMMA	# PS	Total #	PMMA	PS
Vb/V	Print Nos.	No of prints	N2(a)	N1(a)	N	f2(a)	f1(a)
0.260	10914	1	298	1318	1616	0.18	0.82
0.310	10913	1	130	667	797	0.16	0.84
0.500	10910	1	125	793	918	0.14	0.86
0.570	10911	1	100	637	737	0.14	0.86
0.790	10912	1	166	826	992	0.17	0.83

Flow Ratio	Outlet b		# PMMA	# PS	Total #	PMMA	PS
Vb/V	Print No	No of prints	N2(b)	N1(b)	N	f2(b)	f1(b)
0.260	10909	1	985	209	1194	0.82	0.18
0.310	10908	1	982	323	1305	0.75	0.25
0.500	10900/01	2	1204	992	2196	0.55	0.45
0.570	10902	1	423	358	781	0.54	0.46
0.790	10906	1	403	655	1058	0.38	0.62

Figure 6(b): Field = 61.6 g; Flow rate= 0.85 mL/min

Flow Ratio	Outlet a		# PMMA	# PS	Total #	PMMA	PS
	Print Nos.	No of prints					
Vb/V			N2(a)	N1(a)	N	f2(a)	f1(a)
0.250	10919	1	135	1081	1216	0.11	0.89
0.420	10920	1	93	1108	1201	0.08	0.92
0.580	10921	1	40	871	911	0.04	0.96
0.710	10922	1	74	1062	1136	0.07	0.93

Flow Ratio	Outlet b		# PMMA	# PS	Total #	PMMA	PS
	Print No	No of prints					
Vb/V			N2(b)	N1(b)	N	f2(b)	f1(b)
0.250	10915	1	2214	41	2255	0.98	0.02
0.420	10916	1	892	264	1156	0.77	0.23
0.580	10917	1	621	365	986	0.63	0.37
0.710	10918	1	353	364	717	0.49	0.51

C. Number Fraction Data for Figures 7(a) and 7(b)

Feed particle mixture		# PMMA	# PS	Total #	PMMA	PS
Print Nos.	No of prints	N2(i)	N1(i)	N	f2(i)	f1(i)
90906/90906	2	980	518	1497	0.65	0.35

Figure 7(a): Field = 1 g; Flow rate= 0.52 mL/min

Flow Ratio	Outlet a		# PMMA	# PS	Total #	PMMA	PS
	Print Nos.	No of prints					
0.213	92121/02	2	89	209	298	0.30	0.70
0.303	92806/07	2	82	165	247	0.33	0.67
0.522	92804/05	2	65	232	297	0.22	0.78
0.620	92810/01	2	32	287	319	0.10	0.90
0.662	92808/09	2	9	305	314	0.03	0.97
0.802	92123/04	2	3	344	347	0.01	0.99

Flow Ratio	Outlet b		# PMMA	# PS	Total #	PMMA	PS
	Print No	No of prints					
0.213	92117	1	599	2	601	1.00	0.00
0.303	92323/04	2	968	19	987	0.98	0.02
0.522	92321/22	2	836	67	903	0.93	0.07
0.620	92802/03	2	1094	131	1225	0.89	0.11
0.662	92800/01	2	647	71	719	0.90	0.10
0.802	92119/20	2	481	64	545	0.88	0.12

Figure 7(b): Field = 1 g; Flow rate= 0.78 mL/min

Flow Ratio	Outlet a		# PMMA	# PS	Total #	PMMA	PS
	Print Nos.	No of prints					
0.189	92111/13	2	174	352	526	0.33	0.67
0.245	92316/17	2	180	322	502	0.36	0.64
0.405	92314/15	2	150	333	483	0.31	0.69
0.456	92312/13	2	119	339	458	0.26	0.74
0.525	92109/10	2	100	376	476	0.21	0.79
0.631	32310/11	2	56	424	480	0.12	0.88
0.688	92318/19	2	37	326	363	0.10	0.90
0.770	92114/16	2	5	436	441	0.01	0.99

Flow Ratio	Outlet b		# PMMA	# PS	Total #	PMMA	PS
	Print Nos.	No of prints					
0.189	92105/06	2	806	10	816	0.99	0.01
0.245	92306/07	2	537	2	539	1.00	0.00
0.405	92304/05	2	914	13	927	0.99	0.01
0.456	92302/03	2	373	13	386	0.97	0.03
0.525	92103/04	2	264	5	269	0.98	0.02
0.631	92300/01	2	616	23	639	0.96	0.04
0.688	92308/09	2	631	32	663	0.95	0.05
0.770	92107/08	2	656	68	724	0.91	0.09