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APPENDICES

APPENDIX A

THE PARTICLE SIZE OF PIGMENT DISPERSIONS AND PIGMENTED INKS EVALUATED BY LASER LIGHT SCATTERING METHOD

Table A.1 The particle size distribution of the surface modified pigment dispersion

Particle size (μm)	%In			
	Cyan	Magenta	Yellow	Black
0.05	1.08	0.72	0.03	0.97
0.06	2.17	1.47	0.12	1.96
0.07	3.25	2.26	0.31	2.96
0.08	4.3	3.10	0.62	3.97
0.09	5.33	4.01	1.10	4.98
0.11	6.33	5.04	1.83	6.02
0.13	7.28	6.21	2.92	7.08
0.15	8.16	7.57	4.57	8.15
0.17	8.94	9.10	7.00	9.19
0.20	9.49	10.62	10.25	10.04
0.23	9.62	11.60	13.63	10.39
0.27	9.13	11.35	15.34	9.91
0.31	8.01	9.73	14.20	8.55
0.36	6.49	7.44	11.35	6.71
0.42	4.98	5.22	8.38	4.87
0.49	3.47	3.13	5.35	3.04
0.58	1.95	1.31	2.44	1.20
0.67	0.00	0.12	0.57	0.00

Table A.2 The particle size distribution of the microencapsulated pigment dispersion

Particle size	%In			
(μm)	Cyan	Magenta	Yellow	Black
0.05	1.27	1.14	1.13	1.31
0.06	2.53	2.29	2.26	2.60
0.07	3.75	3.41	3.37	3.84
0.08	4.91	4.51	4.45	5.02
0.09	5.99	5.57	5.49	6.11
0.11	6.96	6.57	6.49	7.09
0.13	7.80	7.51	7.42	7.93
0.15	8.49	8.36	8.27	8.59
0.17	8.97	9.07	8.98	9.05
0.20	9.18	9.53	9.46	9.21
0.23	9.02	9.56	9.52	9.00
0.27	8.39	8.98	8.89	8.33
0.31	7.31	7.80	7.84	7.22
0.36	5.93	6.25	6.34	5.80
0.42	4.54	4.70	4.84	4.38
0.49	3.16	3.15	3.34	2.96
0.58	1.77	1.61	1.84	1.55

Table A.3 The particle size distribution of the surface modified pigmented inks, Initial

Particle size (μm)	%In			
	Cyan	Magenta	Yellow	Black
0.05	1.31	1.30	1.26	1.26
0.06	2.59	2.58	2.51	2.51
0.07	3.84	3.82	3.73	3.72
0.08	5.01	4.99	4.88	4.87
0.09	6.09	6.08	5.95	5.93
0.11	7.05	7.06	6.92	6.88
0.13	7.86	7.91	7.77	7.71
0.15	8.5	8.59	8.46	8.37
0.17	8.92	9.06	8.96	8.84
0.20	9.04	9.25	9.19	9.04
0.23	8.78	9.05	9.06	8.88
0.27	8.06	8.38	8.48	8.28
0.31	6.9	7.26	7.45	7.25
0.36	5.75	5.82	6.11	5.93
0.42	4.59	4.39	4.63	4.61
0.49	3.43	2.95	3.09	3.29
0.58	2.28	1.52	1.55	1.98
0.67	0.00	0.00	0.01	0.66

Table A.4 The particle size distribution of the microencapsulated pigmented inks, Initial

Particle size (μm)	%In			
	Cyan	Magenta	Yellow	Black
0.05	1.15	1.31	1.31	1.17
0.06	2.30	2.61	2.60	2.35
0.07	3.44	3.87	3.85	3.50
0.08	4.54	5.05	5.03	4.63
0.09	5.60	6.14	6.12	5.70
0.11	6.61	7.12	7.10	6.73
0.13	7.56	7.96	7.93	7.68
0.15	8.41	8.62	8.59	8.53
0.17	9.12	9.06	9.04	9.23
0.20	9.58	9.22	9.20	9.67
0.23	9.60	9.00	8.98	9.65
0.27	9.00	8.31	8.31	9.00
0.31	7.78	7.19	7.20	7.72
0.36	6.20	5.77	5.79	6.07
0.42	4.62	4.34	4.39	4.43
0.49	3.03	2.92	2.98	2.79
0.58	1.45	1.50	1.57	1.15

Table A.5 The particle size distribution of the surface modified pigmented inks, After storage in 12 weeks

Particle size (μm)	%In			
	Cyan	Magenta	Yellow	Black
0.05	1.02	0.71	0.00	0.86
0.06	2.05	1.45	0.03	1.74
0.07	3.10	2.22	0.09	2.64
0.08	4.14	3.05	0.20	3.58
0.09	5.20	3.95	0.43	4.56
0.11	6.26	4.96	0.86	5.61
0.13	7.34	6.12	1.75	6.75
0.15	8.43	7.47	3.62	8.00
0.17	9.46	9.00	7.51	9.30
0.20	10.27	10.51	14.52	10.48
0.23	10.54	11.52	22.57	11.12
0.27	9.93	11.32	23.43	10.70
0.31	8.42	9.76	14.97	9.16
0.36	6.43	7.54	6.70	7.05
0.42	4.45	5.36	2.53	4.94
0.49	2.47	3.29	0.68	2.83
0.58	0.49	1.44	0.08	0.72
0.67	0.00	0.18	0.00	0.00
0.78	0.00	0.10	0.00	0.00

Table A.6 The particle size distribution of the microencapsulated pigmented inks, After storage in 12 weeks

Particle size (μm)	%In			
	Cyan	Magenta	Yellow	Black
0.05	1.32	1.30	0.88	1.17
0.06	2.63	2.58	1.78	2.35
0.07	3.89	3.82	2.70	3.50
0.08	5.08	5.00	3.65	4.63
0.09	6.17	6.08	4.63	5.70
0.11	7.16	7.05	5.66	6.73
0.13	7.99	7.88	6.75	7.68
0.15	8.65	8.54	7.91	8.59
0.17	9.10	8.99	9.10	9.23
0.20	9.25	9.16	10.15	9.67
0.23	9.01	8.96	10.69	9.65
0.27	8.31	8.31	10.27	9.00
0.31	7.17	7.22	8.84	7.72
0.36	5.73	5.84	6.91	6.07
0.42	4.29	4.46	4.99	4.43
0.49	2.85	3.08	3.13	2.79
0.58	1.41	1.70	1.45	1.15
0.67	0.00	0.00	0.28	0.00
0.78	0.00	0.00	0.16	0.00
0.91	0.00	0.00	0.08	0.00

APPENDIX B

GLASS TRANSITION TEMPERATION OF POLYMER BINDER

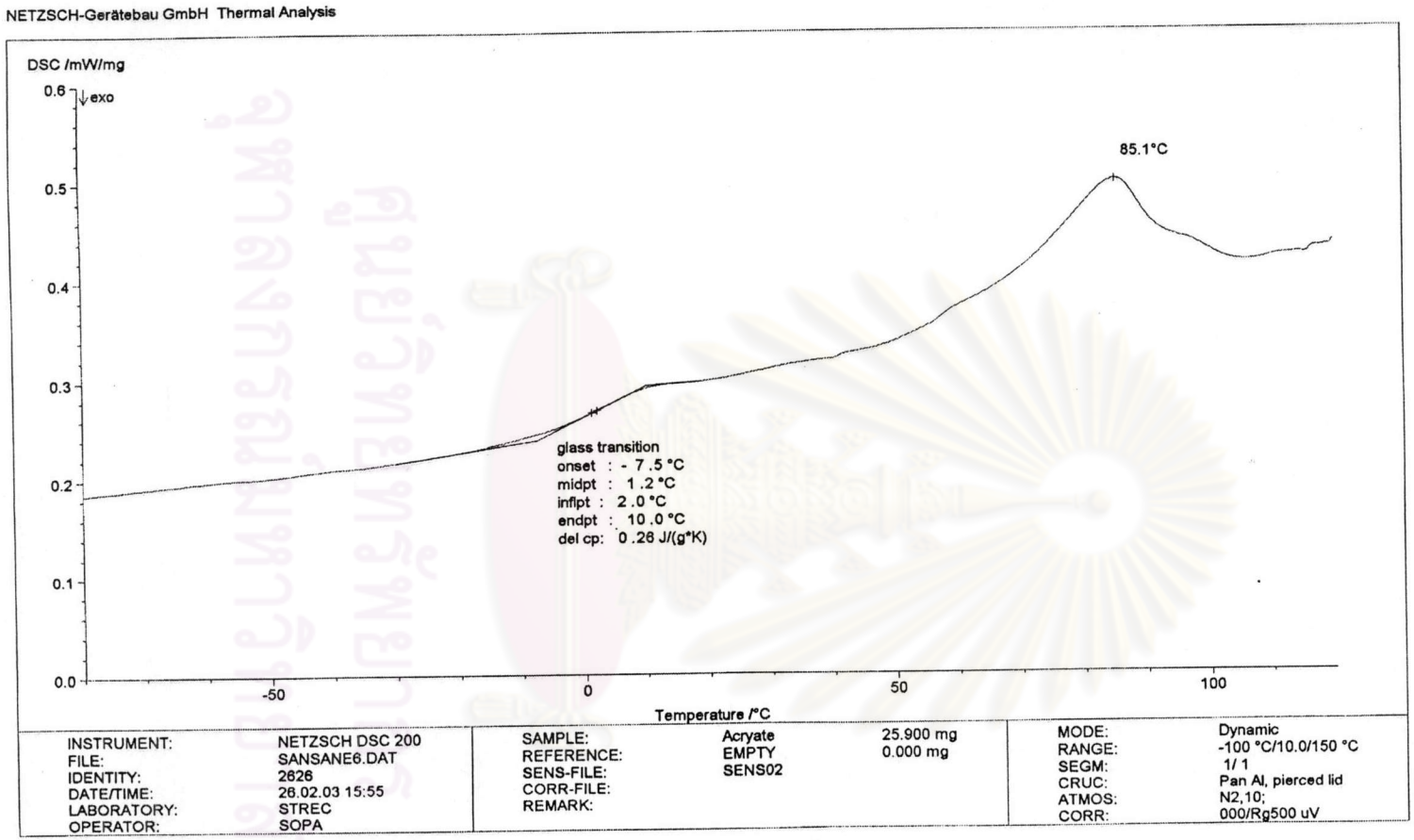

Figure B-1 Glass transition temperature of S-711 polymer binder

APPENDIX C

DETERMINATION OF THE PIGMENT-TO-BINDER RATIO OF MICROENCAPSULATED PIGMENT DISPERSION

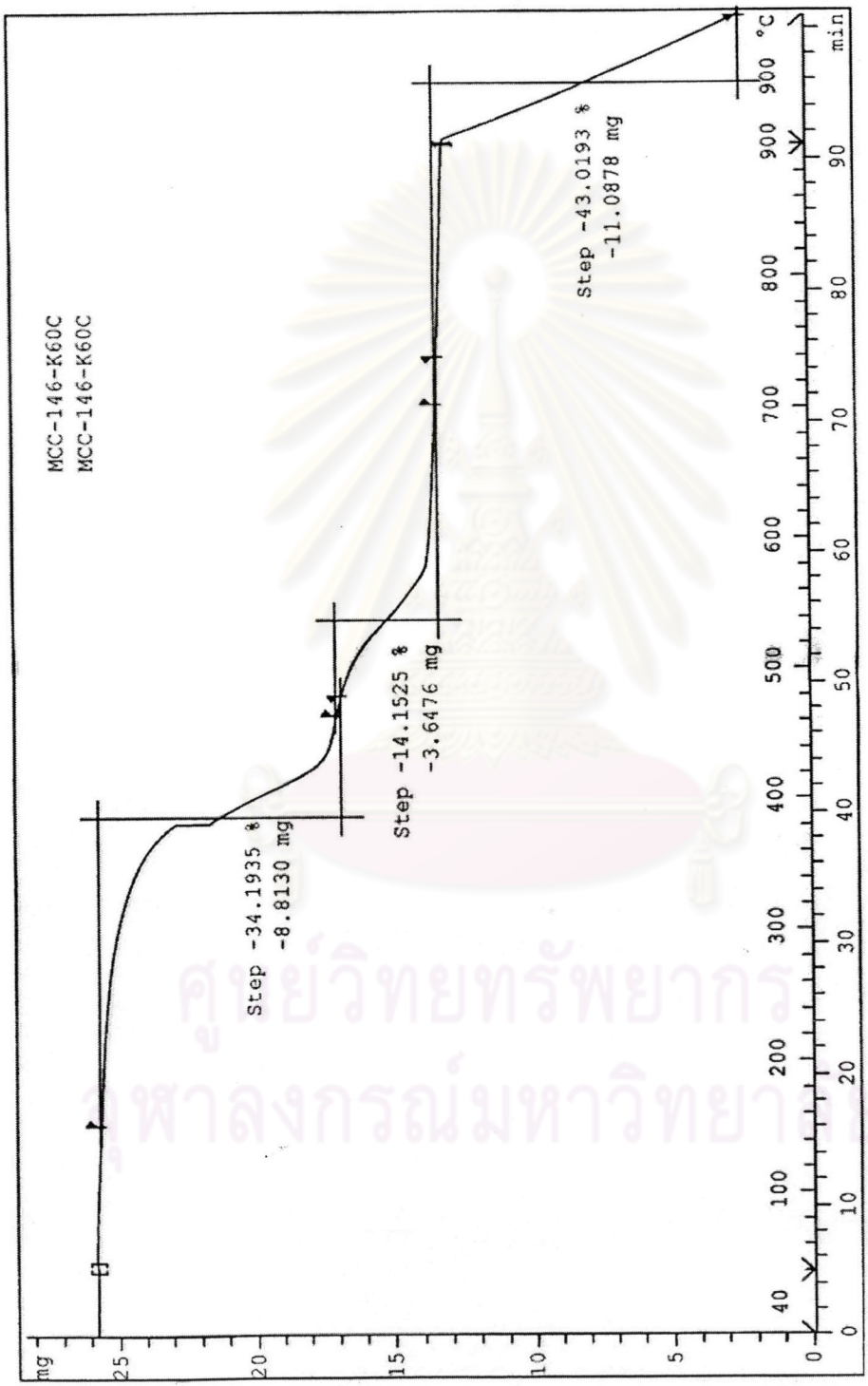

Figure C-1 Gravimetric curve of microencapsulated pigment dispersion, PB 15:4

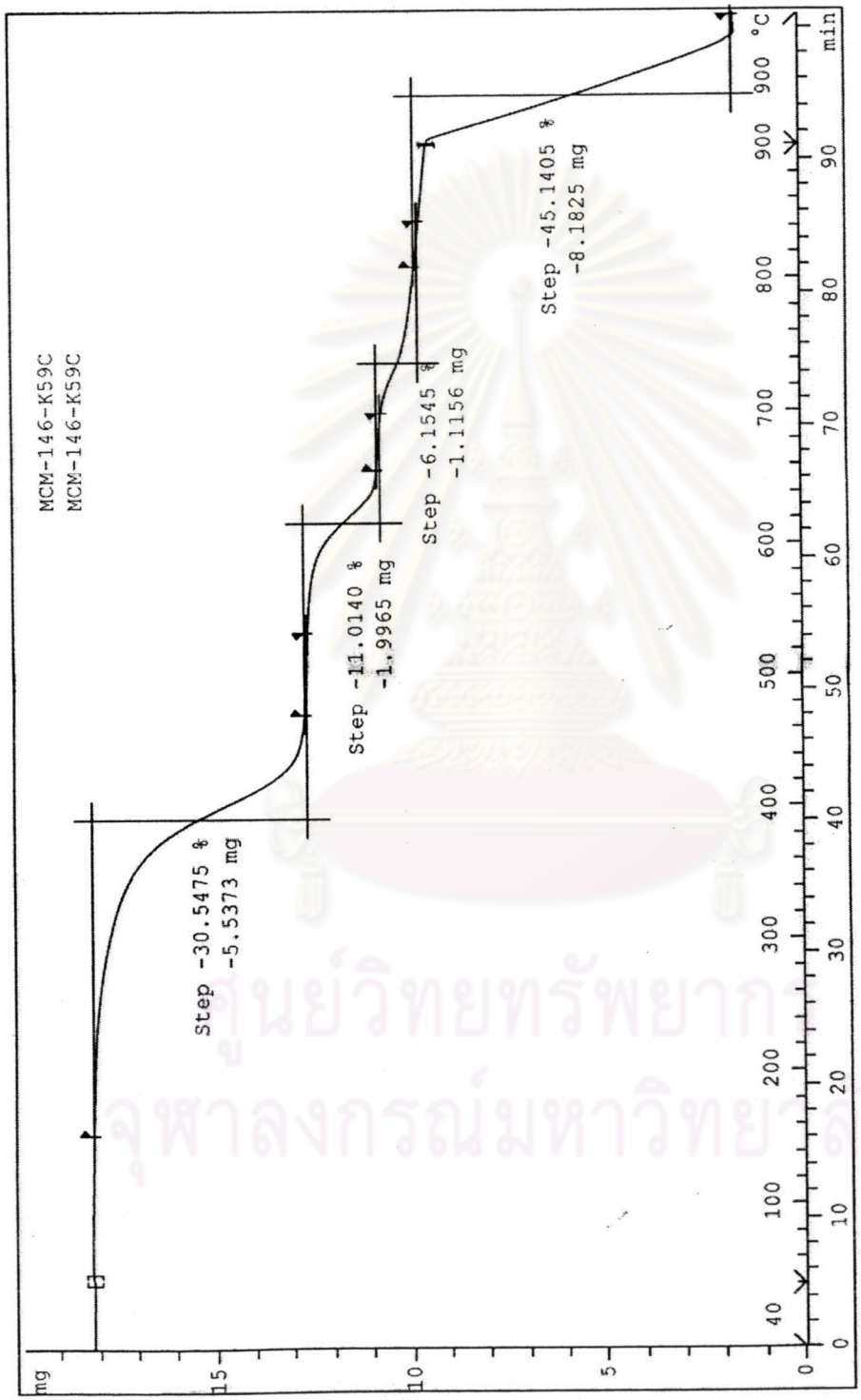

Figure C-2 Gravimetric curve of microencapsulated pigment dispersion, PR 122

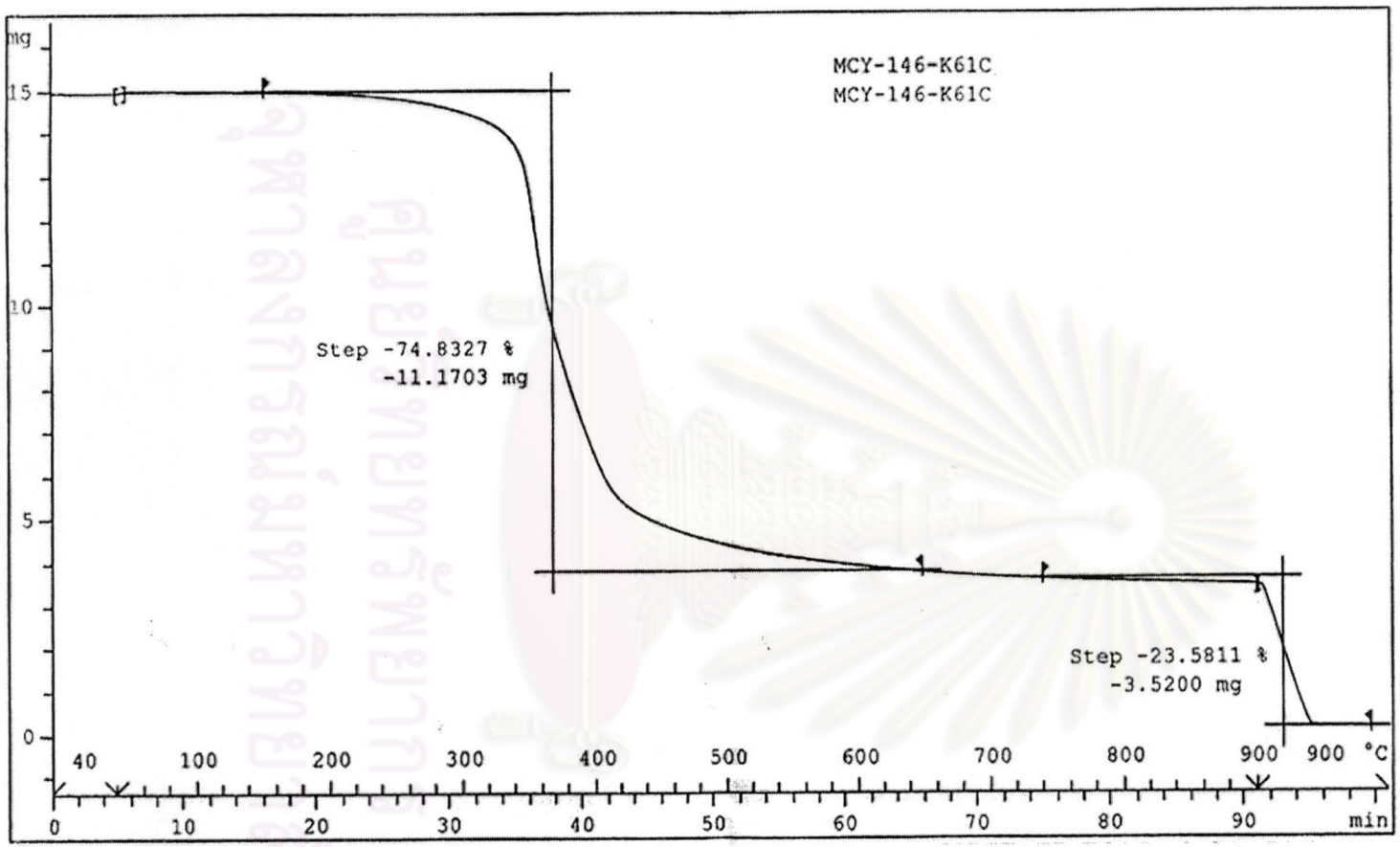

Figure C-3 Gravimetric curve of microencapsulated pigment dispersion, PY 128

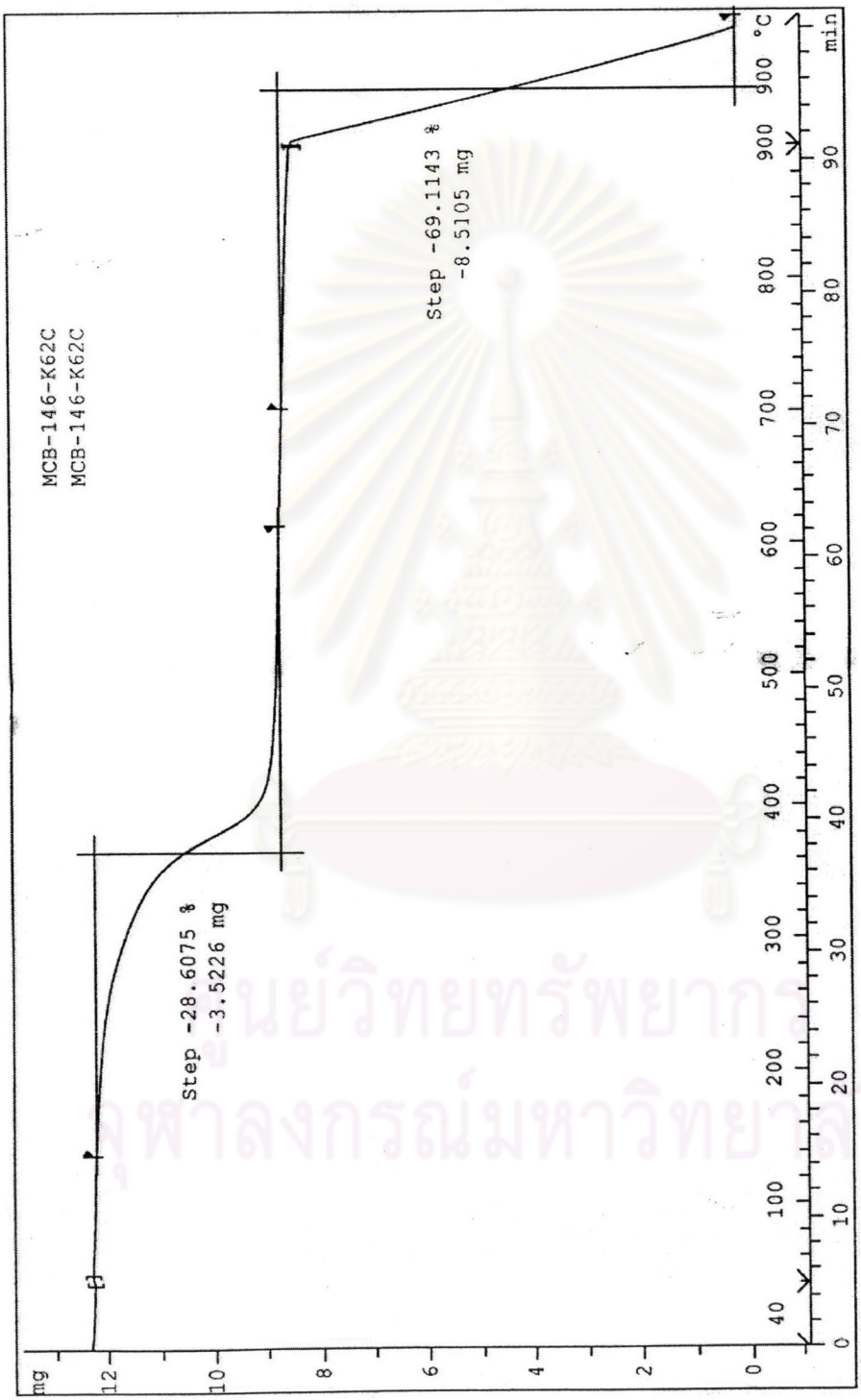

Figure C-4 Gravimetric curve of microencapsulated pigment dispersion, PBk 7

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