

Table 1. Effect of DVA/TEG molar ratio on the oligomerization of TEG

		Composition (%)		
		DVA/TEG molar ratio		
		1	1.5	3.0
VO Vinyl-[TEG] _n -OH	V-TEG-OH, n=1	0	-	-
	Dimer, n=2	0	-	-
	Trimer, n=3	6.11	-	-
	Tetramer, n=4	7.89	-	-
	Pentamer, n=5	7.62	-	-
	Hexamer, n=6	5.72	-	-
	Heptamer, n=7	3.98	-	-
	Octamer, n=8	2.61	-	-
	Nonamer, n=9	1.31	-	-
	Decamer, n=10	0.53	-	-
	Undecamer, n=11	0.36	-	-
	Total	36.13	0	0
OO HO-[TEG] _n -OH		Not detected		
VV Vinyl-[TEG] _n -Vinyl	V-TEG-V, n=1	0	0	0
	Dimer, n=2	0	0	38.61
	Trimer, n=3	14.20	37.59	28.3
	Tetramer, n=4	14.29	27.57	18.89
	Pentamer, n=5	12.55	14.29	9.17
	Hexamer, n=6	9.70	9.02	3.3
	Heptamer, n=7	6.49	5.76	0.8
	Octamer, n=8	2.08	3.51	-
	Nonamer, n=9	2.40	1.75	-
	Decamer, n=10	1.47	0.50	-
	Undecamer, n=11	0.43	-	-
	Dodecamer, n=12	0.17	-	-
Total	63.88	100	100	
Grand total	100	100	100	
M_n (g/mol)	1707.9	1248.6	738.07	
\bar{D}_m	1.11	1.14	1.24	

WCALB = 170 mg_{1.0 eq.}, 85.5mg_{1.5 eq.}, 84 mg_{3.0 eq.} [CALB] = 2.77×10^{-4} mol/L_{1.0 eq.}, 2.19×10^{-4} mol/L_{1.5 eq.}, 1.35×10^{-4} mol/L_{3.0 eq.}, 30 minutes

Composition was calculated from MALDI-ToF mass spectrometry: Composition(%)=peak intensity/total peak intensity.

Table 2. Kinetics of the DVA-TEG reaction at DVA/TEG = 1.

DVA/TEG = 1/1		Composition (%)					
		Time (min)					
		5.0	10	15	20	25	30
VO Vinyl-[TEG] _n -OH	V-TEG-OH n = 1	0	0	0	0	0	0
	Dimer, n=2	5.86	7.45	5.57	2.55	3.68	0
	Trimer, n=3	8.56	12.38	10.68	9.18	10.29	6.11
	Tetramer, n=4	8.26	9.42	10.57	7.14	10.66	7.89
	Pentamer, n=5	4.35	6.33	6.7	3.57	6.25	7.62
	Hexamer, n=6	3	3.66	3.98	3.06	3.68	5.72
	Heptamer, n=7	1.65	2.11	2.16	1.02	2.57	3.98
	Octamer, n=8	0.9	1.27	1.25	0.51	1.84	2.61
	Nonamer, n=9	0.3	0.56	0.8	0.51	0.74	1.31
	Decamer, n=10	0.15	0.28	0.23	-	0.74	0.53
	Undecamer, n=11	-	-	-	-	-	0.36
	Total	33.03	43.46	41.94	27.54	40.45	36.13
OO HO-[TEG] _n -OH		Not detected					
VV Vinyl-[TEG] _n -Vinyl	V-TEG-V, n=1	10.06	7.74	5.68	3.57	2.57	0
	Dimer, n=2	16.82	14.91	16.25	17.86	12.5	0
	Trimer, n=3	16.52	15.19	17.16	21.43	19.12	14.2
	Tetramer, n=4	9.76	9.14	9.32	13.78	11.03	14.29
	Pentamer, n=5	6.16	4.78	5	7.65	6.99	12.55
	Hexamer, n=6	3.9	2.39	2.61	4.08	3.68	9.7
	Heptamer, n=7	2.55	1.41	1.25	2.55	2.21	6.49
	Octamer, n=8	0.75	0.7	0.57	1.02	1.1	2.08
	Nonamer, n=9	0.30	0.28	0.23	0.51	0.37	2.4
	Decamer, n=10	0.15	-	-	-	-	1.47
	Undecamer, n=11	-	-	-	-	-	0.43
	Dodecamer, n=12	-	-	-	-	-	0.17
Total	66.97	56.54	58.07	72.45	59.57	63.88	
Grand total	100	100	100	100	100	100	
M _n (g/mol)	1227.6	1224.7	1252.7	1289.44	1359.0	1707.9	
Đ _m	1.18	1.17	1.14	1.14	1.14	1.11	

Table 3 shows the oligomer compositions with DVA/TEG = 1.5 and 3.

Table 3. Kinetics of the DVA-TEG reaction at DVA/TEG = 1.5 and 3.

DVA/TEG = 1.5		Composition (%)					
		Time (min)					
		5.0	10	15	20	25	30
VO Vinyl-[TEG] _n -OH	V-TEG-OH, n=1	0	0	0	0	0	0
	Dimer, n=2	0	0	0	0	0	0
	Trimer, n=3	1.86	4.71	0.88	-	-	-
	Tetramer, n=4	0.63	2.23	0.29	-	-	-
	Pentamer, n=5	-	0.99	-	-	-	-
	Hexamer, n=6	-	0.25	-	-	-	-
	Total	2.49	8.18	1.17	0	0	0
OO HO-[TEG] _n --OH		Not detected					
VV Vinyl-[TEG] _n -Vinyl	V-TEG-V, n=1	0	0	0	0	0	0
	Dimer, n=2	46.27	37.47	43.73	40.65	38.26	37.59
	Trimer, n=3	26.40	24.57	26.82	23.57	23.47	27.57
	Tetramer, n=4	13.97	12.66	14.58	15.71	14.8	14.29
	Pentamer, n=5	6.16	4.78	5	7.65	6.99	12.55
	Hexamer, n=6	3.90	2.39	2.61	4.08	3.68	9.70
	Heptamer, n=7	2.55	1.41	1.25	2.55	2.21	6.49
	Octamer, n=8	0.75	0.7	0.57	1.02	1.1	2.08
	Nonamer, n=9	0.3	0.28	0.23	0.51	0.37	2.4
Total	97.51	91.818	98.822	100	100	100	
Grand total	100	100	100	100	100	100	
M _n (g/mol)	1115.5	1210.6	1162.5	1240.8	1288.6	1248.6	
Đ _m	1.10	1.13	1.12	1.15	1.17	1.14	
DVA/TEG = 3		Composition (%) by MALDI-ToF					
		Time (min)					
		5	10	15	20	25	30
VO Vinyl-[TEG] _n -OH		Not detected					
OO HO-[TEG] _n --OH		Not detected					
VV Vinyl-[TEG] _n -Vinyl	V-TEG-V, n=1	42.86	51.47	49.5	44.19	42.6	38.61
	Dimer, n=2	27.27	28.30	29.1	31.29	29.56	28.30
	Trimer, n=3	18.51	13.97	14.04	17.10	17.97	18.89
	Pentamer, n=5	8.1	5.15	5.69	6.13	7.54	9.17
	Hexamer, n=6	2.60	1.10	1.34	1.29	2.03	3.33
	Heptamer	0.65	-	0.33	-	0.29	0.83
Total	100	100	100	100	100	100	
M _n (g/mol)	723.01	679.12	692.16	703.9	712.69	738.07	
Đ _m	1.23	1.17	1.19	1.18	1.21	1.24	

