Supporting Information

Unraveling the Thermal Stability of Aromatic Disulfide Epoxy Vitrimers: A Comprehensive Study using Principal Component Analysis (PCA)

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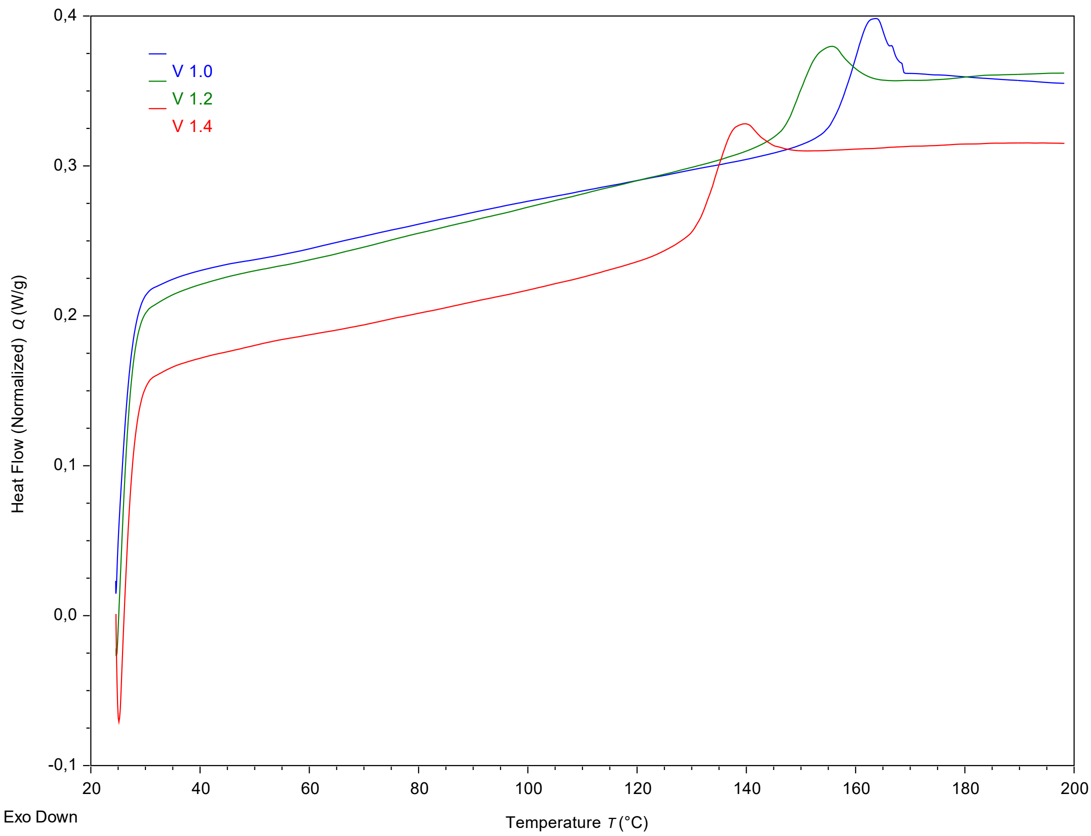

Figure S1. The complete cure of the epoxy vitrimers (V 1.0, V1.2 and V 1.4) by differential scanning calorimetry (DSC).

Table S1. MCR data at different times, temperatures and stoichiometries of the MC

Conditions	**% MCR**				
	1.0	**1.1**	**1.2**	**1.3**	**1.4**
200 10 min	14,05	16,42	2,5	18,12	20,98
200 30 min	22,5	45,22	46,87	38,45	21,01
200 1 h	66,7	67,03	43,46	67,95	78,1
205 10 min	14,2	8,83	2	12,56	11,39
205 30 min	37,88	39,86	32,85	45,2	47,54
205 1 h	60,79	58,89	69,88	60,08	64,68
210 10 min	27,02	38,54	35,39	39,81	50,52
210 30 min	39,79	32,3	38,42	38,5	40,34
210 1 h	66,73	86,47	76,56	79,71	84,74
215 10 min	54,56	47,84	45,05	32,7	39,71
215 30 min	51,32	53,27	62,13	48,34	46,84
215 1 h	93,74	88,5	92,65	78,19	90,96
220 10 min	29,58	28,08	21,07	25,88	31,07
220 30 min	55,9	61,84	52,63	70,28	63,95
220 1 h	99,73	95,5	96,45	100	99,56

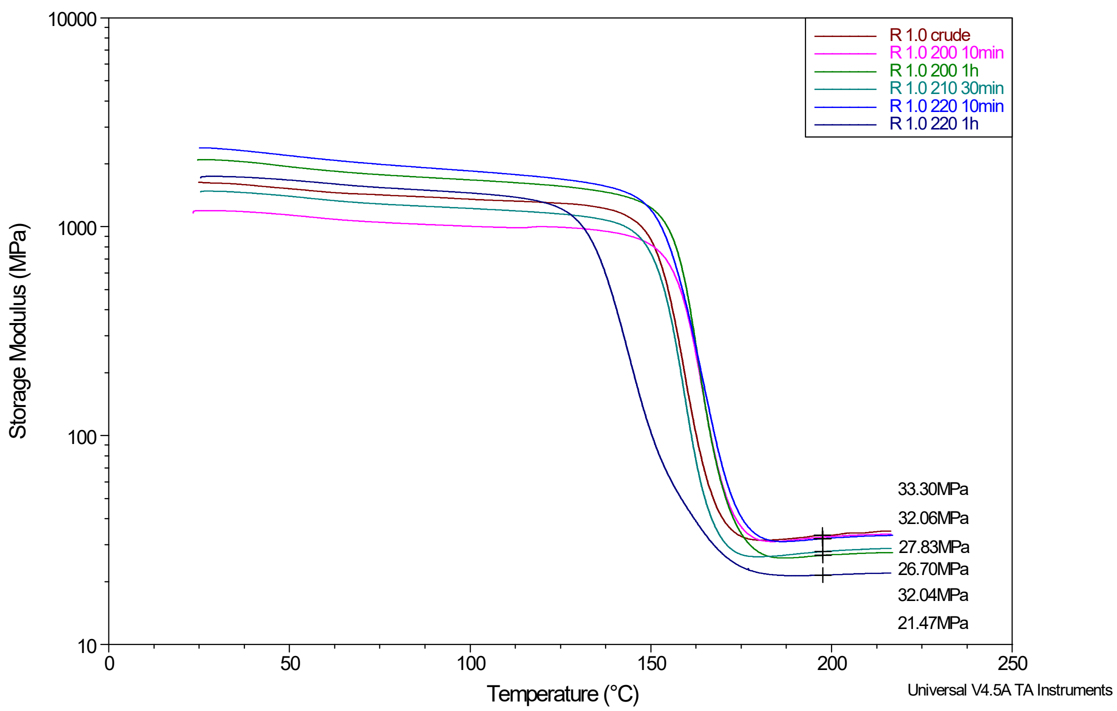

Figure S2. Storage modulus vs temperature in V 1.0 samples

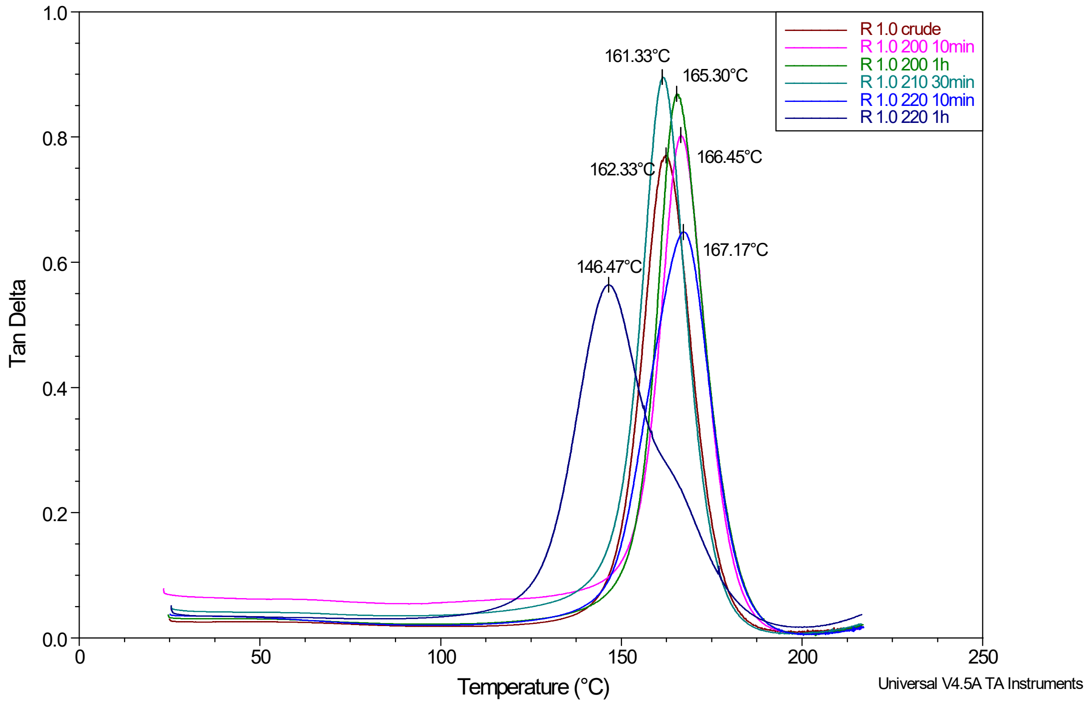

Figure S3. Tan Delta vs temperature in V 1.0 samples.

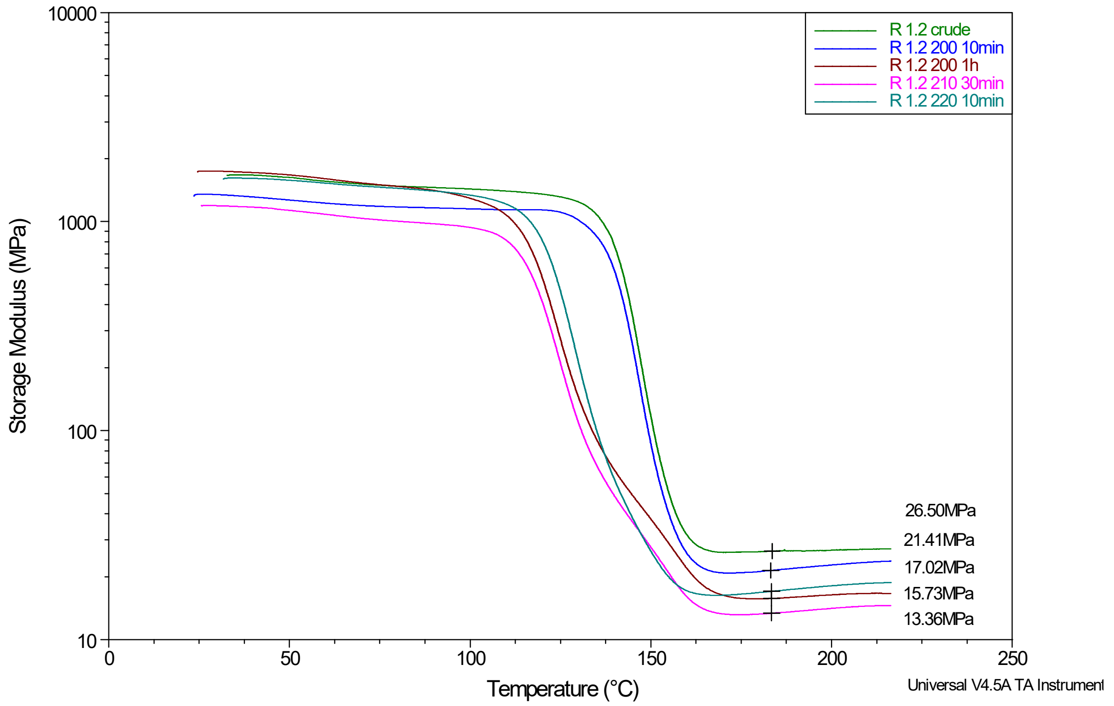

Figure S4. Storage modulus vs temperature in V 1.2 samples.

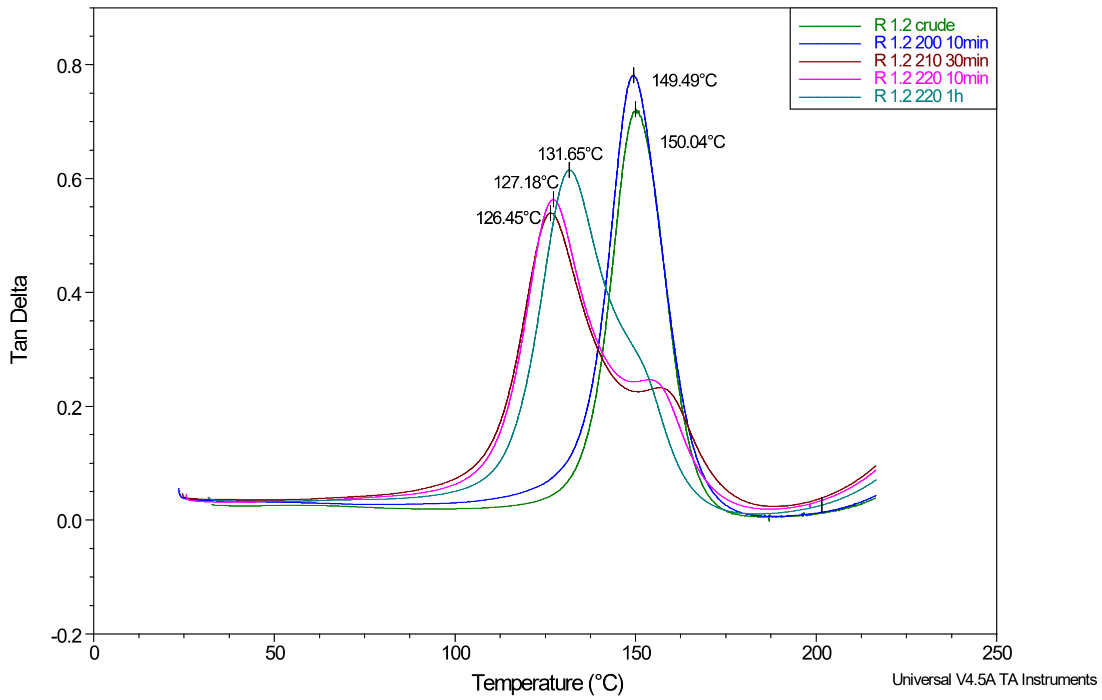

Figure S5. Tan Delta vs temperature in V 1.2 samples.

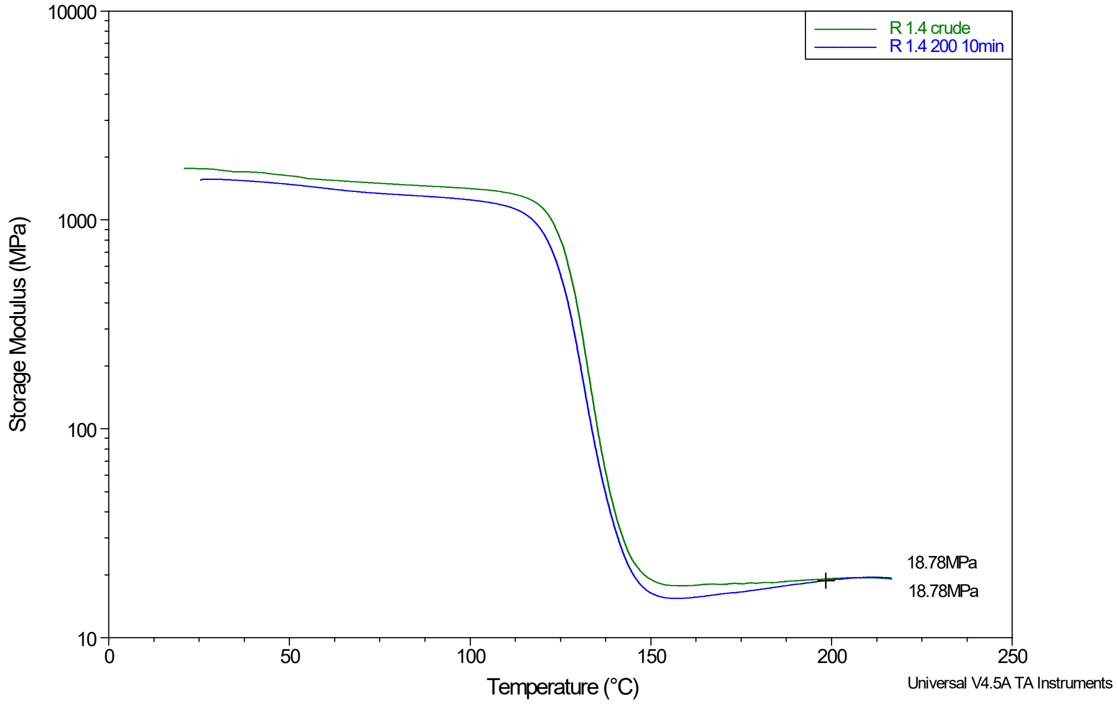

Figure S6. Storage modulus vs temperature in V 1.4 samples.

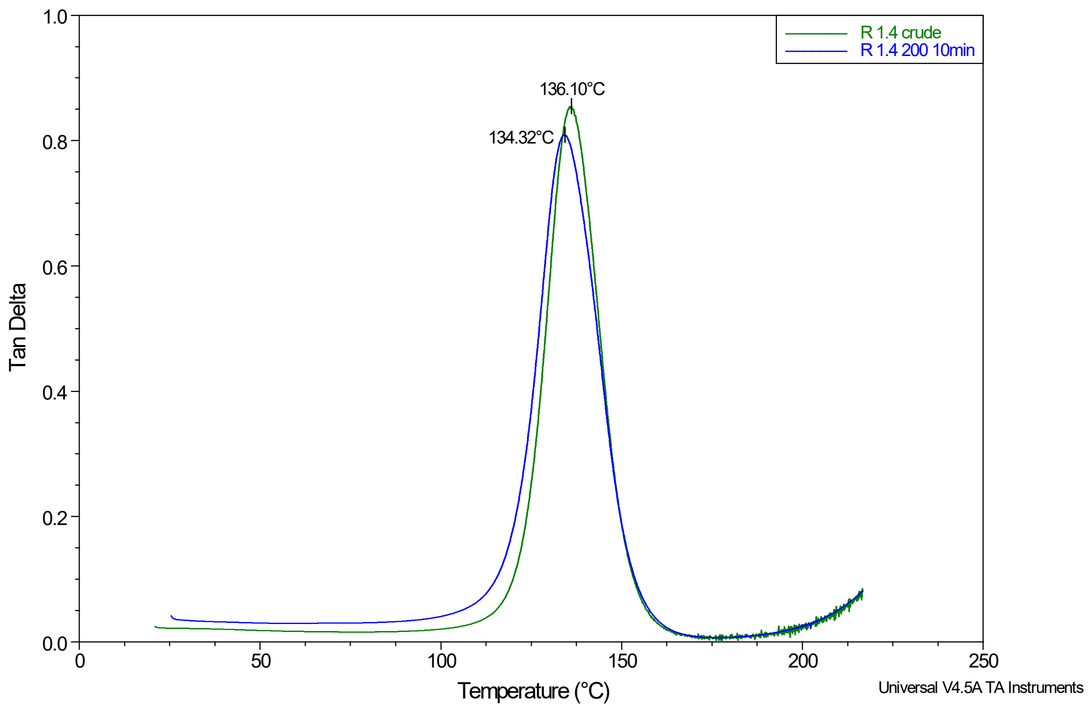

Figure S7. Tan Delta vs temperature in V 1.4 samples.

Table S2. ΔTg and ΔG' after thermal treatment of the vitrimer samples depending on a) time, b) temperature and c) stoichiometry.

a)

Network	10 minutes			60 minutes		
	ΔTg (ºC)	ΔG' (MPa)	Degradation	ΔTg (ºC)	ΔG' (MPa)	Degradation
V 1.0 220 ºC	1	2	NO	16	12	YES
V 1.2 200 ºC	0	4	NO	23	10	YES
V 1.4 200 ºC	2	1	NO	degraded	degraded	YES

b)

Network	200 ºC			220 ºC		
	ΔTg (ºC)	ΔG' (MPa)	Degradation	ΔTg (ºC)	ΔG' (MPa)	Degradation
V 1.0 60m	0	5	NO	16	12	YES
V 1.2 10m	0.5	3.5	NO	18.3	8.2	YES
V 1.4 10m	1.7	0.7	NO	degraded	degraded	YES

c)

Network	1.0			1.2			1.4		
	ΔTg (ºC)	ΔG' (MPa)	Degradation	ΔTg (ºC)	ΔG' (MPa)	Degradation	ΔTg (ºC)	ΔG' (MPa)	Degradation
V 200ºC -10m	0	1	NO	0	4	NO	2	1	NO
V 210ºC -30m	1	5	NO	23	12	YES	degraded	degraded	YES
V 220ºC -60m	16	12	YES	25	25	YES	degraded	degraded	YES