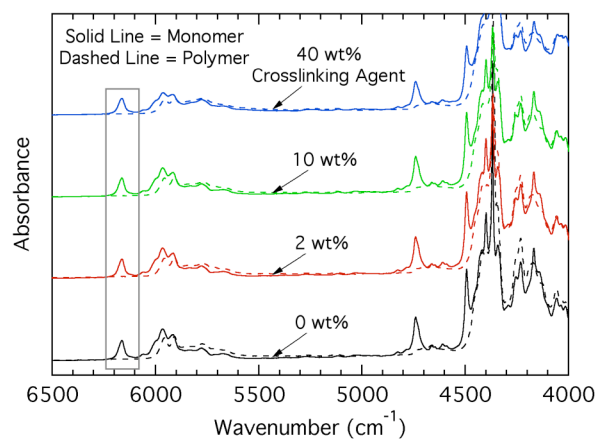


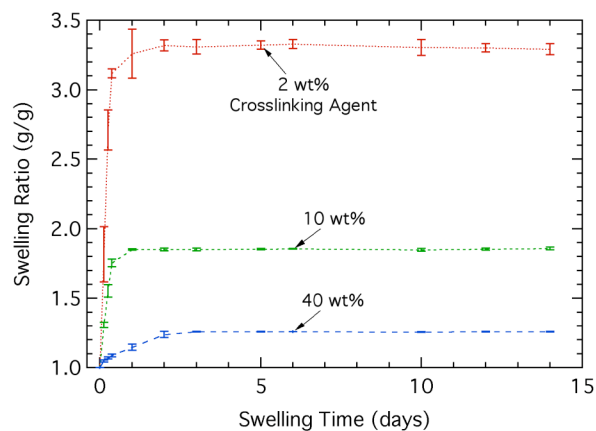
## Electronic supplementary information (ESI)

**Table S1** Shape-memory material compositions used in this study in Wt% and Mole% crosslinking agent (CA).

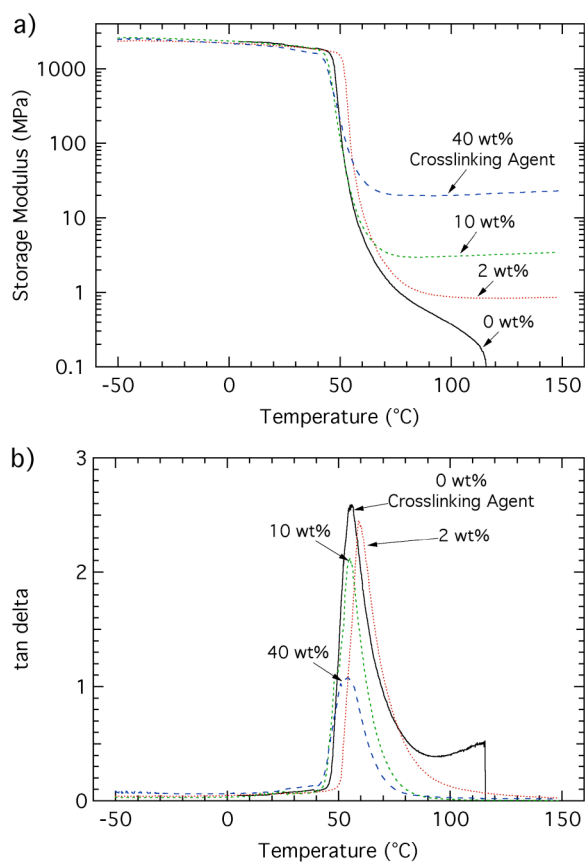
Wt% CA	Mole% CA
0	0
2	0.6
10	3.2
40	16.6



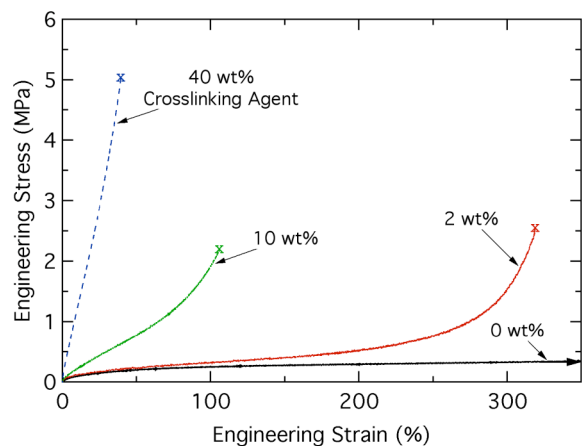
**Figure S1** Representative scans from NIR analysis of the four polymer compositions tailored for this study. Double-bond conversion was determined by the disappearance of the peak at approximately  $6165 \text{ cm}^{-1}$ .



**Figure S2** Swelling ratios, in 2-Propanol, as a function of swelling time (time in solvent) for the three crosslinked shape-memory materials used in this study.



**Figure S3** Representative a) storage modulus and b) tan delta curves as a function of temperature for the four shape-memory materials used in this study.



**Figure S4** Representative tensile stress-strain curves where the “x” indicates sample failure (fracture).

**Table S2** Stored recovery ratios ( $RR_s$ ) for the four materials used in this study after storage (for varying storage times up to ~1 year) and recovery. CA = Crosslinking Agent

Mean Storage Time (Days)	Stored Recovery Ratios ( $RR_s$ )			
	0 wt% CA	2 wt% CA	10 wt% CA	40 wt% CA
1 ± 0	99 ± 2	99 ± 3	103 ± 1	107 ± 0
(n = 8)	(n = 2)	(n = 2)	(n = 2)	(n = 2)
2 ± 0	99 ± 1	98 ± 0	108 ± 2	112 ± 0
(n = 8)	(n = 2)	(n = 2)	(n = 2)	(n = 2)
7 ± 0	99 ± 0	101 ± 1	107 ± 4	99 ± 8
(n = 14)	(n = 3)	(n = 4)	(n = 3)	(n = 4)
14 ± 0	98 ± 1	98 ± 1	103 ± 2	104 ± 1
(n = 8)	(n = 2)	(n = 2)	(n = 2)	(n = 2)
27 ± 0	97 ± 1	101 ± 0	100 ± 1	101 ± 3
(n = 8)	(n = 2)	(n = 2)	(n = 2)	(n = 2)
60 ± 0	97 ± 1	99 ± 2	101 ± 2	93 ± 6
(n = 8)	(n = 2)	(n = 2)	(n = 2)	(n = 2)
90 ± 1	98 ± 1	98 ± 0	104 ± 2	95 ± 1
(n = 7)	(n = 2)	(n = 1)	(n = 2)	(n = 2)
183 ± 1	98 ± 1	99 ± 2	102 ± 4	98 ± 2
(n = 8)	(n = 2)	(n = 2)	(n = 2)	(n = 2)
386 ± 3	96 ± 0	97 ± 0	104 ± 1	95 ± 3
(n = 8)	(n = 2)	(n = 2)	(n = 2)	(n = 2)