

Liquid Crystal-based Organosilicon Elastomers with Supreme Mechanical Strength

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Supporting Information

Table S1. Summary of the composition and characterization of silicone oils with different vinyl content.

Sample	Polydimethylsiloxane (g)	D ₄ ^{vi} (g)	M _v	Apparent viscosity (mPa.s, 25°C)
a	300	0	51889 ^a	10339 ^b
b	300	0.81	52692 ^a	10398 ^b
c	300	3.68	48881 ^a	9862 ^b

^aDetermined by ubbelodhe viscometer; ^bDetermined by rheometer.

Table S2. Summary of 5%, 10%, maximum weight loss temperature and 800°C residual weight.

No.	5%weight loss temperature (°C)	10%weight loss temperature (°C)	Maximum weight loss temperature (°C)	800°C residual weight (%)
Sample 1	425	450	591	45
Sample 2	404	448	605	47
Sample 3	397	440	605	46
Sample 4	389	433	629	46
Sample 5	380	423	628	43
Sample 6	397	432	625	43

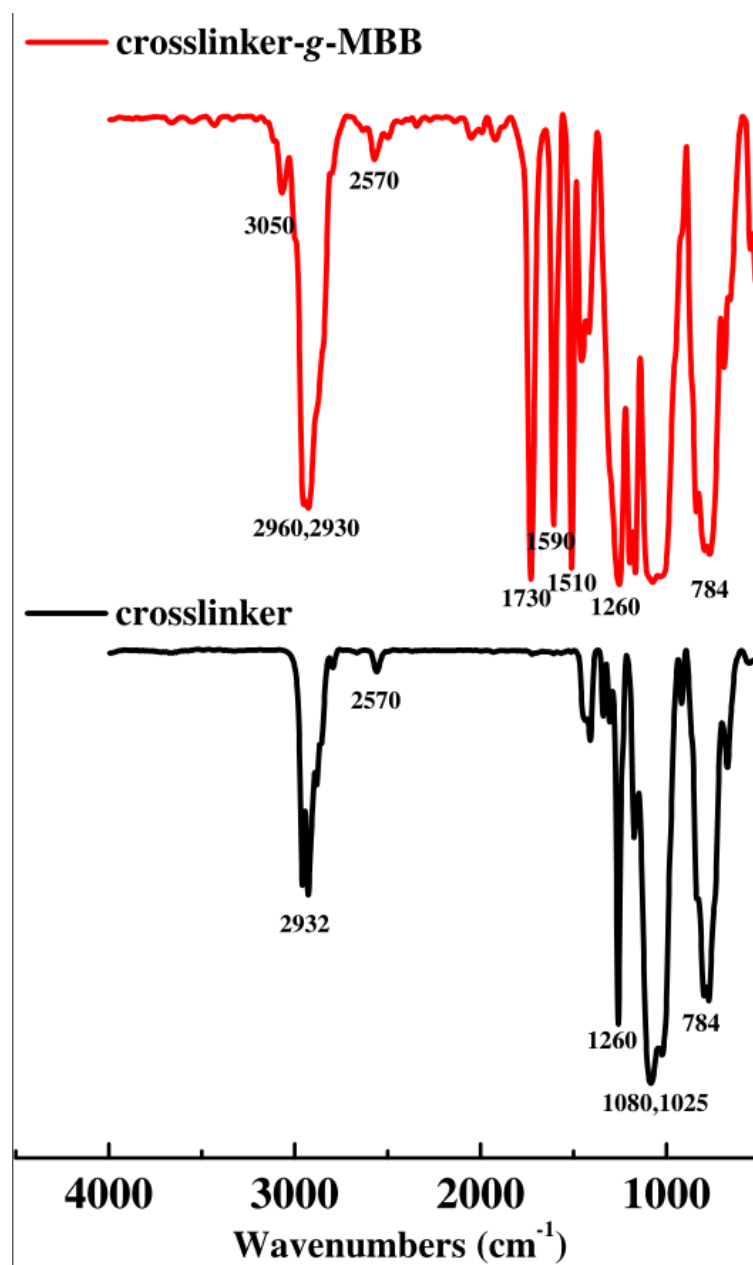


Figure S1. FT-IR spectra of crosslinker and crosslinker-g-MBB.

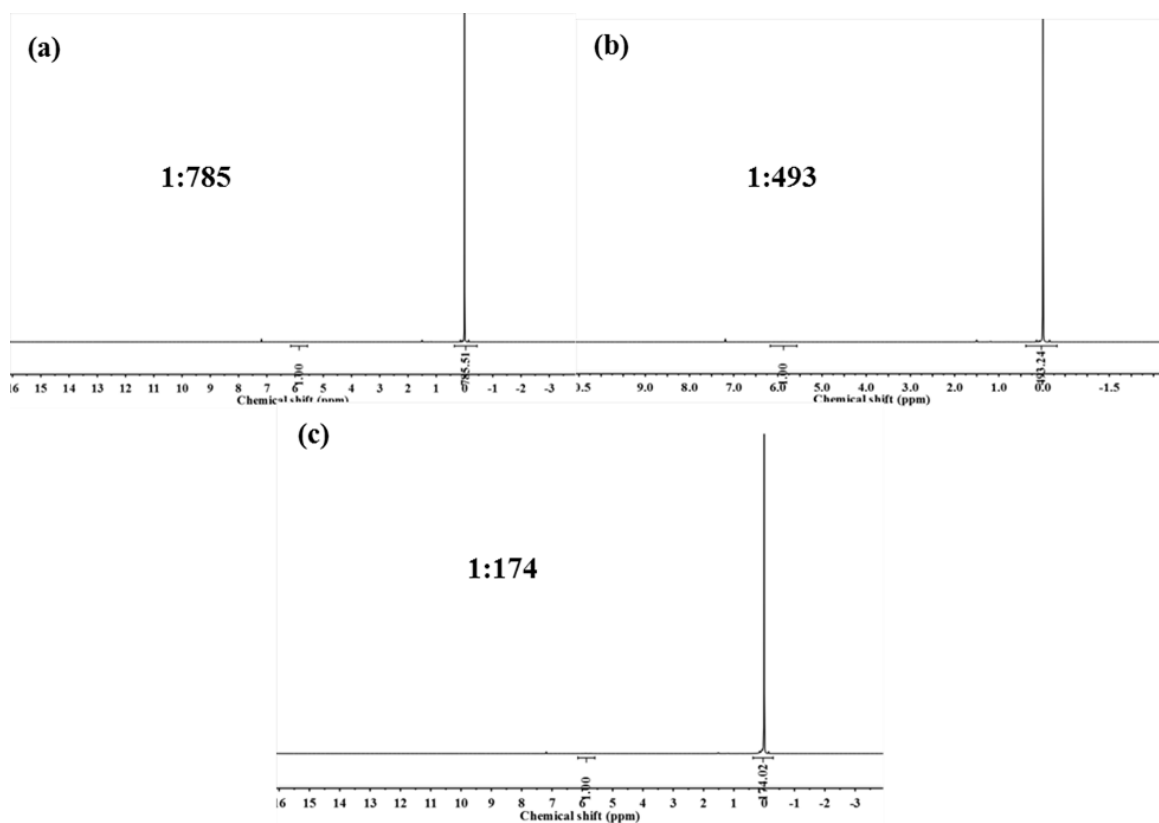


Figure S2. ^1H NMR spectra of three kinds of silicone oils with different vinyl content (a) Silicone oil (1‰ vinyl); (b) Silicone oil (2‰ vinyl); (c) Silicone oil (5‰ vinyl).

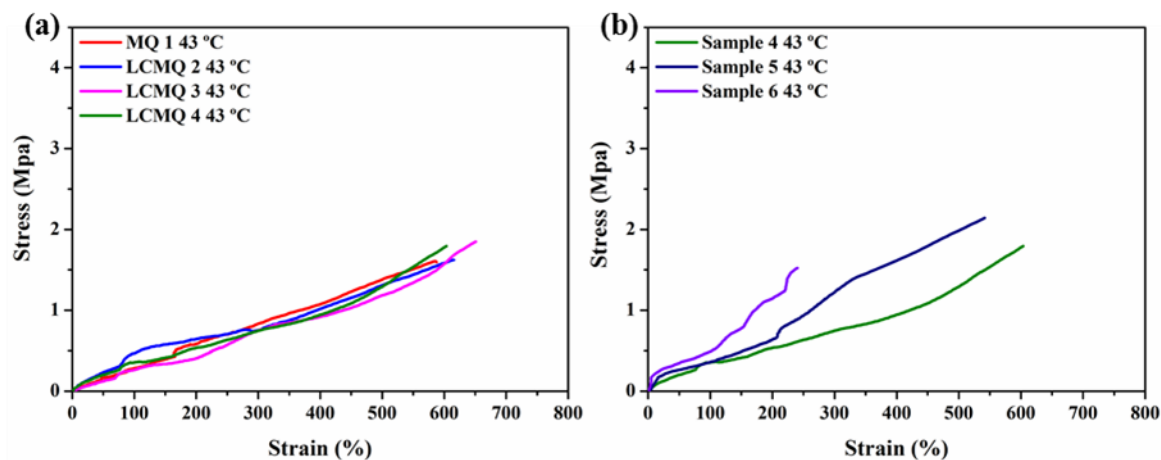


Figure S3. Stress-strain curves of (a) MQ 1 and LCMQs 2–4 and (b) LCMQs 4–6. The curves were performed at 43 °C.

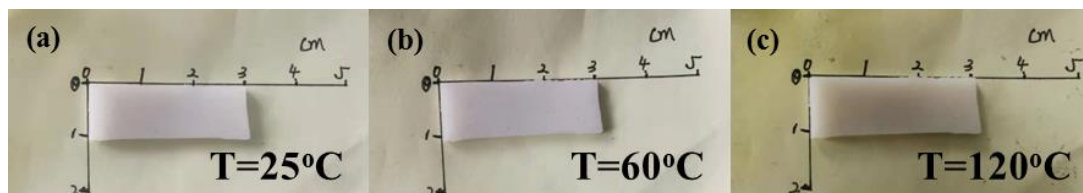


Figure S4. The images of (a) LCMQ 4 at 25°C; (b) LCMQ 4 at 60°C; (c) LCMQ 4 at 120°C.

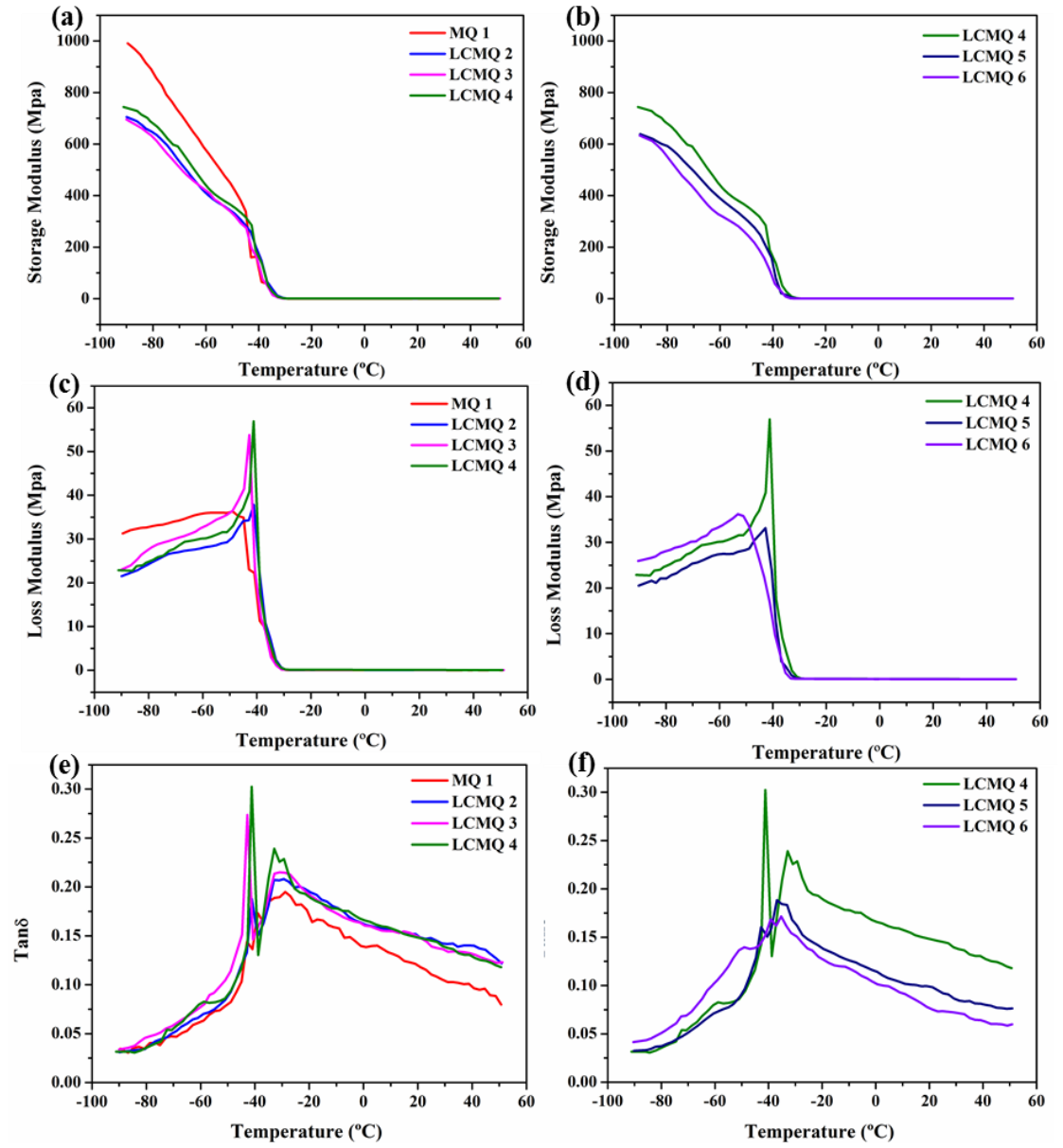


Figure S5. Storage modulus curves of (a) MQ 1–4 and (b) LCMQ 4–6; loss modulus curves of (c) MQ 1–4 and (d) LCMQ 4–6; loss factor curves of (e) MQ 1–4 and (f) LCMQ 4–6.