

## Supporting Information

# Film formation of high $T_g$ latex using hydroplasticization: Explanations from NMR relaxometry

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## Dry $T_g$ measurements - Modulated differential scanning calorimetry (MDSC)

Table S1. MDSC temperature program

Start temperature (°C)	End temperature (°C)	Temperature ramp (°C/min)	Isothermal period (min)	Temperature modulation (°C)	Modulation period (s)
40	-85	20	10	-	-
-85	160	3	5	2	60
160	-85	20	5	-	-
-85	160	3	-	2	60

Table S2. Summary of the results obtained by MDSC from dry copolymer films

MAA Composition (%)	$T_{g, \text{ half width}}$ [°C]	$T_{g, \text{ onset}}$ [°C]	$T_{g, \text{ end}}$ [°C]	Enthalpy [J/g°C]
2	25.9	19.2	32.6	0.27
5	30.2	23.0	37.4	0.23
10	37.3	28.4	46.2	0.29
15	46.9	36.0	57.8	0.22
20	50.2	36.8	63.7	0.39

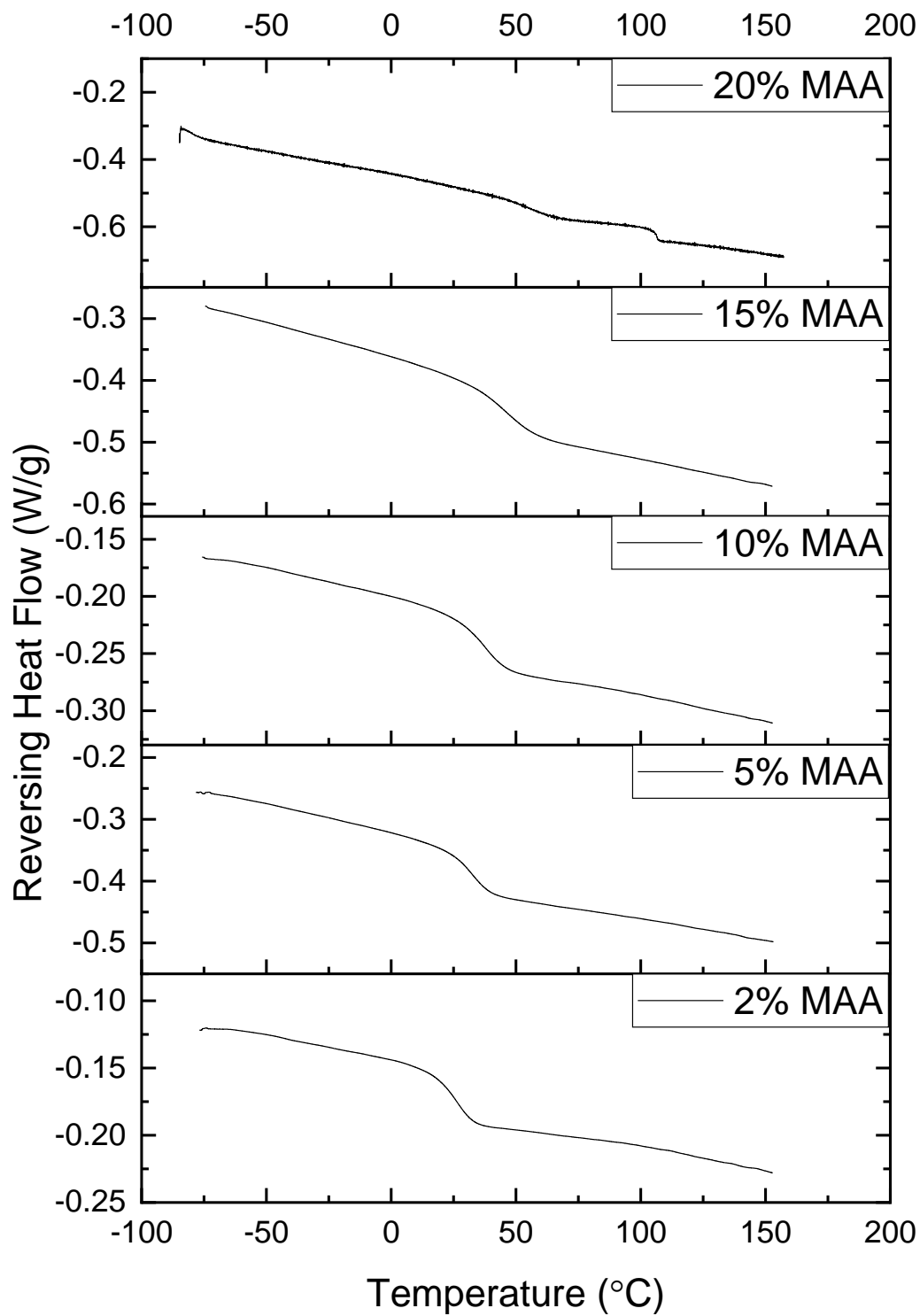


Figure S1. Thermograms for the dry copolymer films with varying MAA content as noted.

## Wet $T_g$ measurements - Modulated differential scanning calorimetry (MDSC)

Table S3. MDSC temperature program

Start temperature (°C)	End temperature (°C)	Temperature ramp (°C/min)	Isothermal period (min)	Temperature modulation (°C)	Modulation period (s)
40	75	20	15	-	-
75	5	10	5		
5	90	3		2	60

Table S4. Solids Content of Wet Latex Samples

Copolymer MAA Composition (%)	Solids Content [wt-%]
2	61
5	54
10	50
15	37

Table S5. Summary of the Results Obtained by MDSC from Wet Samples

MAA Composition [%]	$T_{g, \text{half width}}$ [°C]	$T_{g, \text{onset}}$ [°C]	$T_{g, \text{end}}$ [°C]	Enthalpy [J/g°C]
2	18.4	14.6	22.3	0.14
5	18.6	14.5	22.6	0.11
10	19.1	15.0	23.2	0.11
15	19.3	16.6	22.1	0.05
20	Not measured	Not measured	Not measured	Not measured

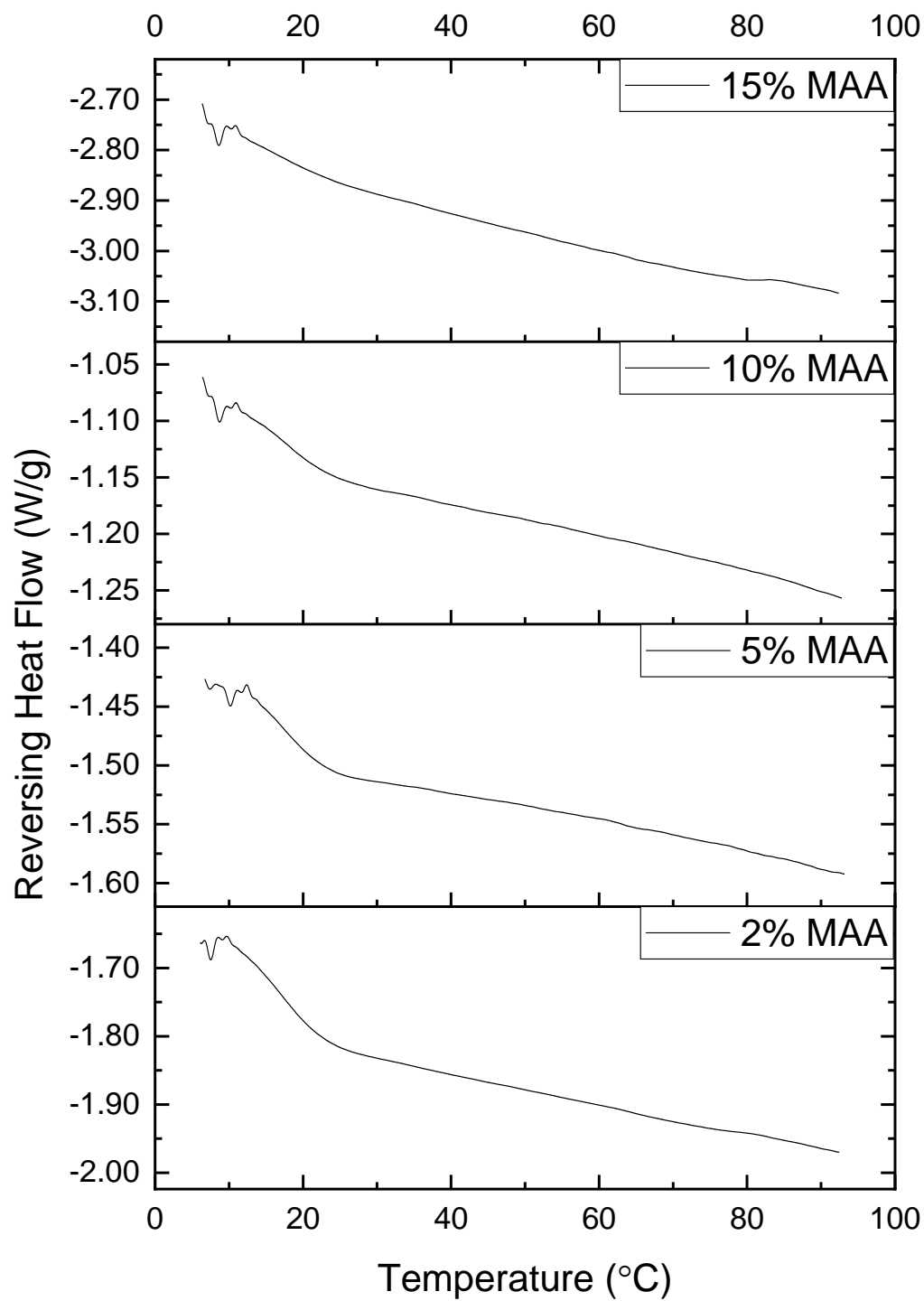


Figure S2 Thermogram for wet copolymer film with varying MAA concentrations, as noted.