

Supporting information

For:

Bio-Based Reactive Diluents as Sustainable Replacement for Styrene in MAESO Resin

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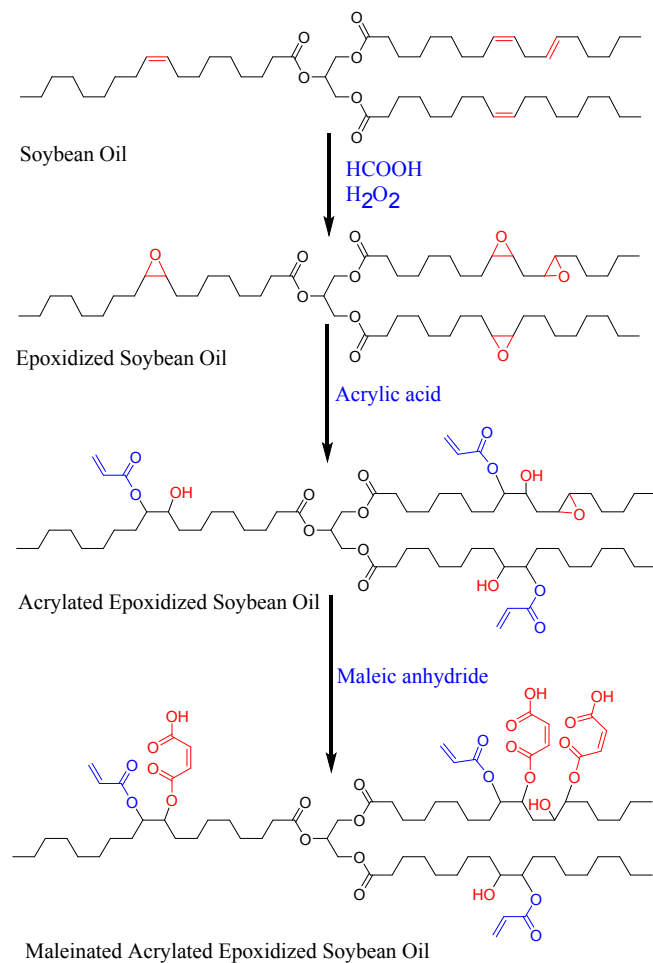


Fig. S1 Schematic for the synthesis of MAESO

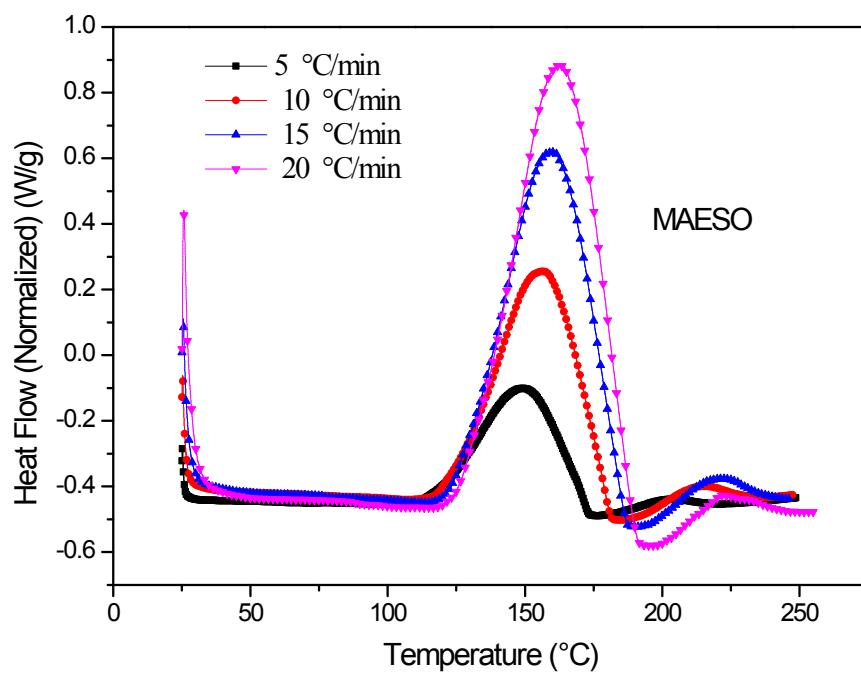


Fig. S2 Dynamic DSC results for MAESO at different heating rates of 5, 10, 15 and 20 °C/min

Table S1 Peak temperature and enthalpy of MAESO resin system

Resin	Ramp (°C/min)	Peak temperature (°C)	Enthalpy (J/g)	Peak temperature (°C)	Enthalpy (J/g)
MAESO	5	149.346	154.36	201.587	7.86
	10	156.965	154.28	211.506	9.56
	15	160.532	161.38	217.916	10.60
	20	162.856	158.27	221.705	8.95

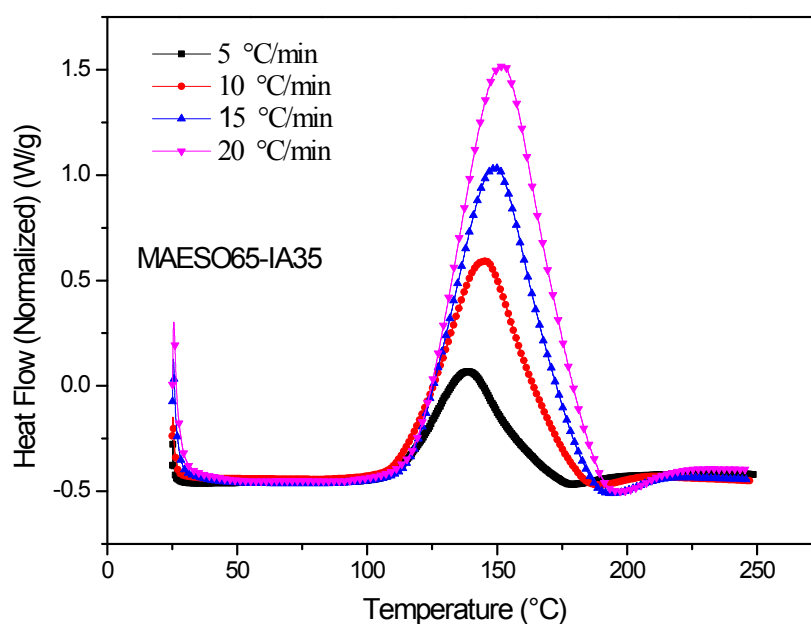


Fig. S3 Dynamic DSC results for MAESO-IA at different heating rates of 5, 10, 15 and 20 °C/min

Table S2 Peak temperature and enthalpy of MAESO-IA resin system

Resin	Ramp (°C/min)	Peak temperature (°C)	Enthalpy (J/g)
	5	138.657	215.34

MAESO-IA	10	145.79	234.16
	15	150.091	230.58
	20	152.236	234.17

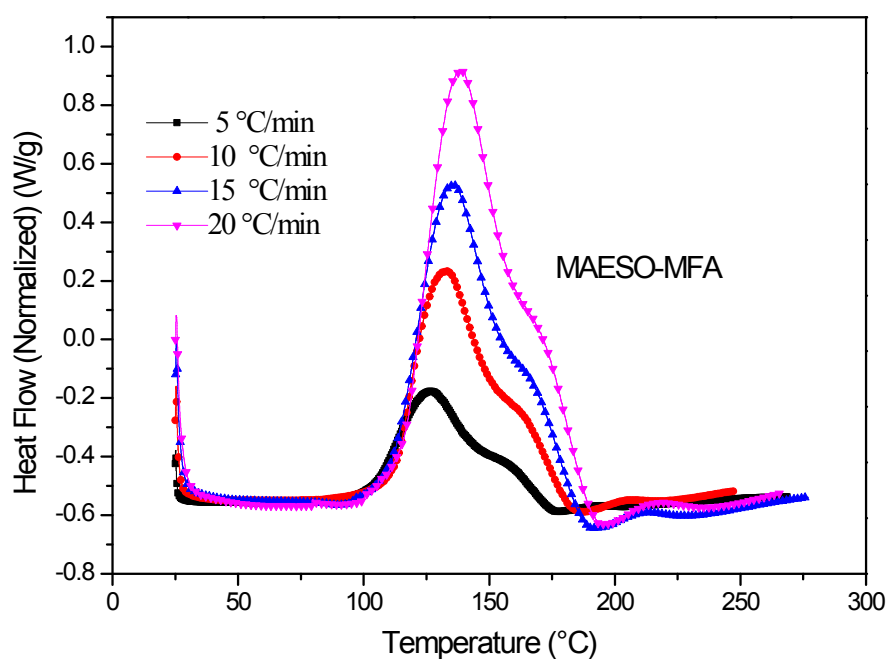


Fig. S4 Dynamic DSC results for MAESO-MFA at different heating rates of 5, 10, 15 and 20 °C/min

Table S3 Peak temperature and enthalpy of MAESO-MFA resin system

Resin	Ramp (°C/min)	Peak temperature (°C)	Enthalpy (J/g)	Peak temperature (°C)	Enthalpy (J/g)
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MAESO-MFA	5	126.745	186.745	193.281	1.42
	10	133.285	187.25	204.862	2.03
	15	136.515	186.33	211.283	2.35
	20	139.046	187.00	215.89	2.93

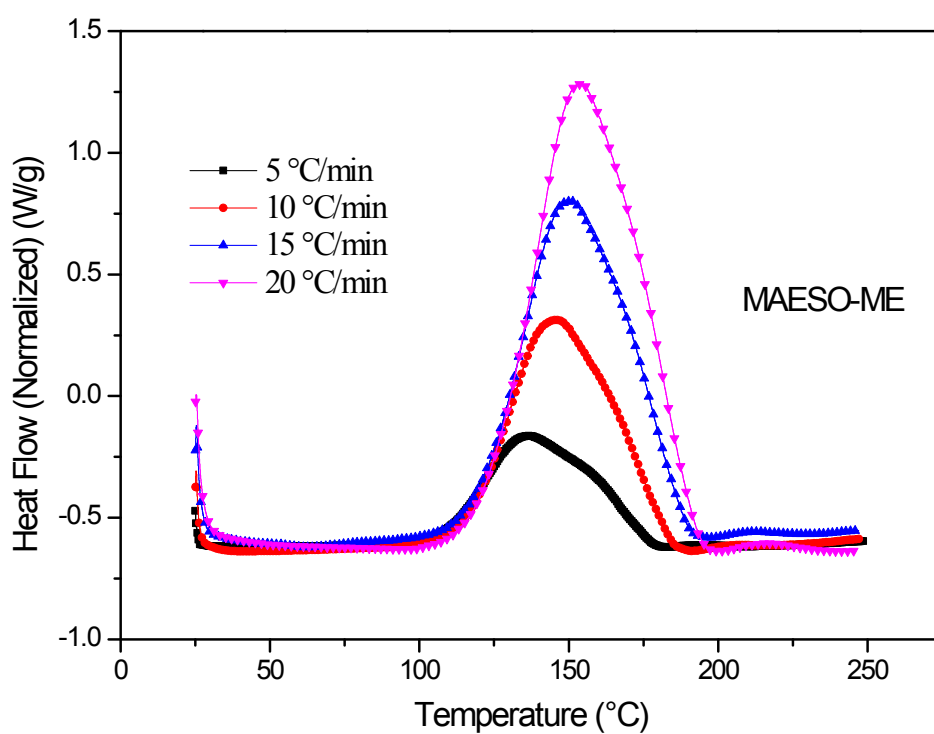


Fig. S5 Dynamic DSC results for MAESO-ME at different heating rates of 5, 10, 15 and 20 °C/min

Table S4 Peak temperature and enthalpy of MAESO-ME resin system

Resin	Ramp (°C/min)	Peak temperature (°C)	Enthalpy (J/g)
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MAESO-ME	5	136.699	236.69
	10	145.997	238.75
	15	150.642	238.78
	20	154.225	242.59

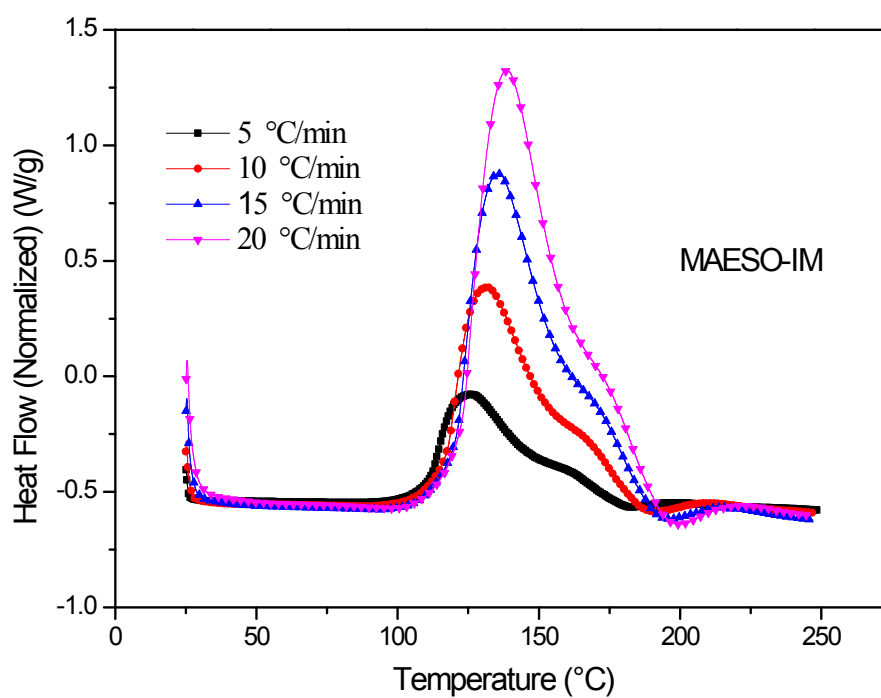


Fig. S6 Dynamic DSC results for MAESO-IM at different heating rates of 5, 10, 15 and 20 °C/min

Table S5 Peak temperature and enthalpy of MAESO resin system

Resin	Ramp (°C/min)	Peak temperature (°C)	Enthalpy (J/g)
	5	125.835	207.14

MAESO-IM	10	131.887	210.98
	15	136.004	216.04
	20	138.733	210.84

Soxhlet extraction tests were conducted to analyze the curing extent of the MAESO-RD thermosets. Approximately 1.000 g of MAESO-RD thermoset sample was weighted (m_1) and extracted with 250 mL of refluxing methylene chloride in a Soxhlet extractor for 24 h. The remaining insoluble fraction was dried under reduced pressure and weighed (m_2). The insoluble weight percentage was calculated as $100\% \times m_2/m_1$.

Table S6 Insoluble weight percent for MAESO-RD thermosets systems

Formulations	Insoluble weight percent (%)
MAESO	90.6 ± 0.2
MAESO-MFA	91.0 ± 0.3
MAESO-ME	93.2 ± 0.2
MAESO-IM	91.8 ± 0.1
MAESO-IA	92.1 ± 0.2
MAESO-St	92.7 ± 0.3