Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information for;

Optimization of Synthetic Parameters of High-purity Trifunctional Mercaptoesters and Their Curing Behavior for Thiol-epoxy Click Reaction

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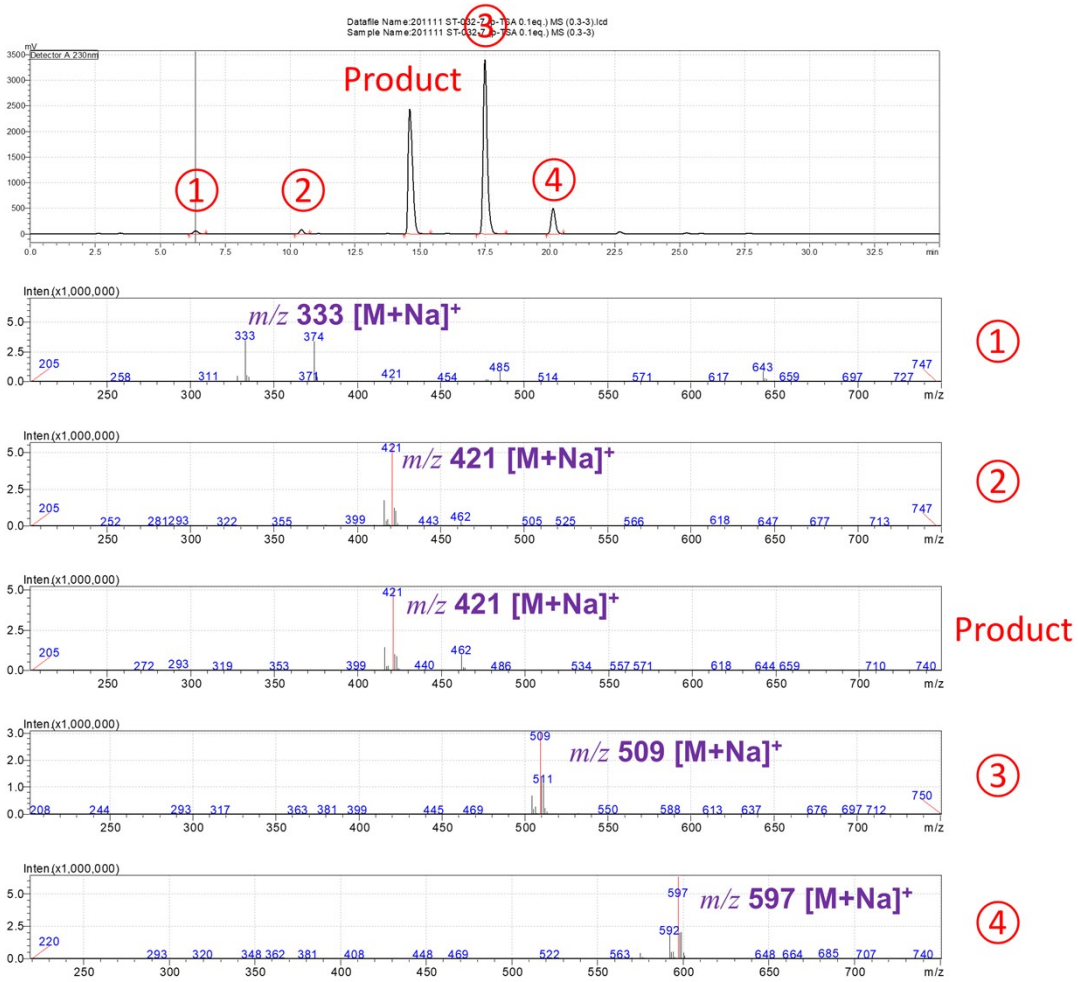
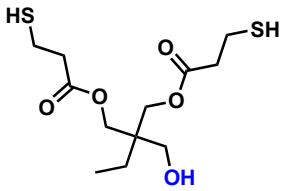
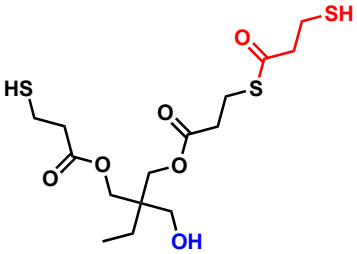
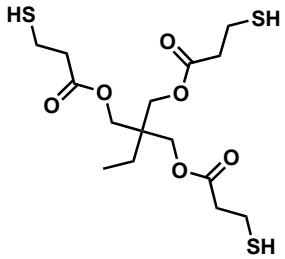
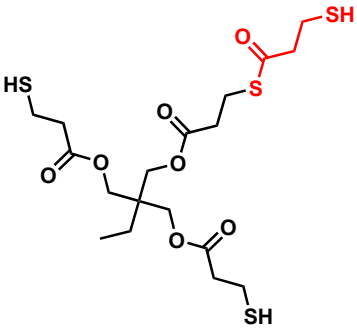
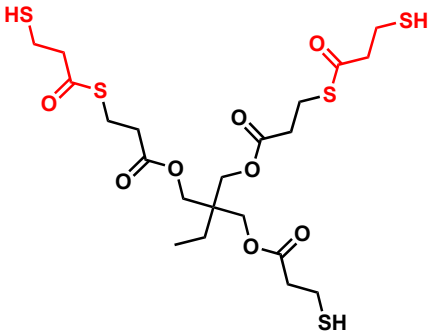


Figure S1. HPLC chromatograms and mass spectra for eluted peaks of TMPMP sample.

Table S1. Chemical structure and chemical name that correspond to the HPLC trace.

Peak	Chemical structure	Chemical name
(a)		2-ethyl-2-(hydroxymethyl)propane-1,3-diyl *bis*(3-mercaptopropanoate)
(b)		2-(hydroxymethyl)-2-(((3-((3-mercaptopropanoyl)thio)propanoyl)oxy)methyl)butyl 3-mercaptopropanoate
(c)		trimethylolpropane-*tris*(3-mercaptopropionate)
(d)		2-ethyl-2-(((3-((3-mercaptopropanoyl)thio)propanoyl)oxy)methyl)propane-1,3-diyl *bis*(3-mercaptopropanoate)
(e)		2-ethyl-2-(((3-mercaptopropanoyl)oxy)methyl)propane-1,3-diyl *bis*(3-((3-mercaptopropanoyl)thio)propanoate)

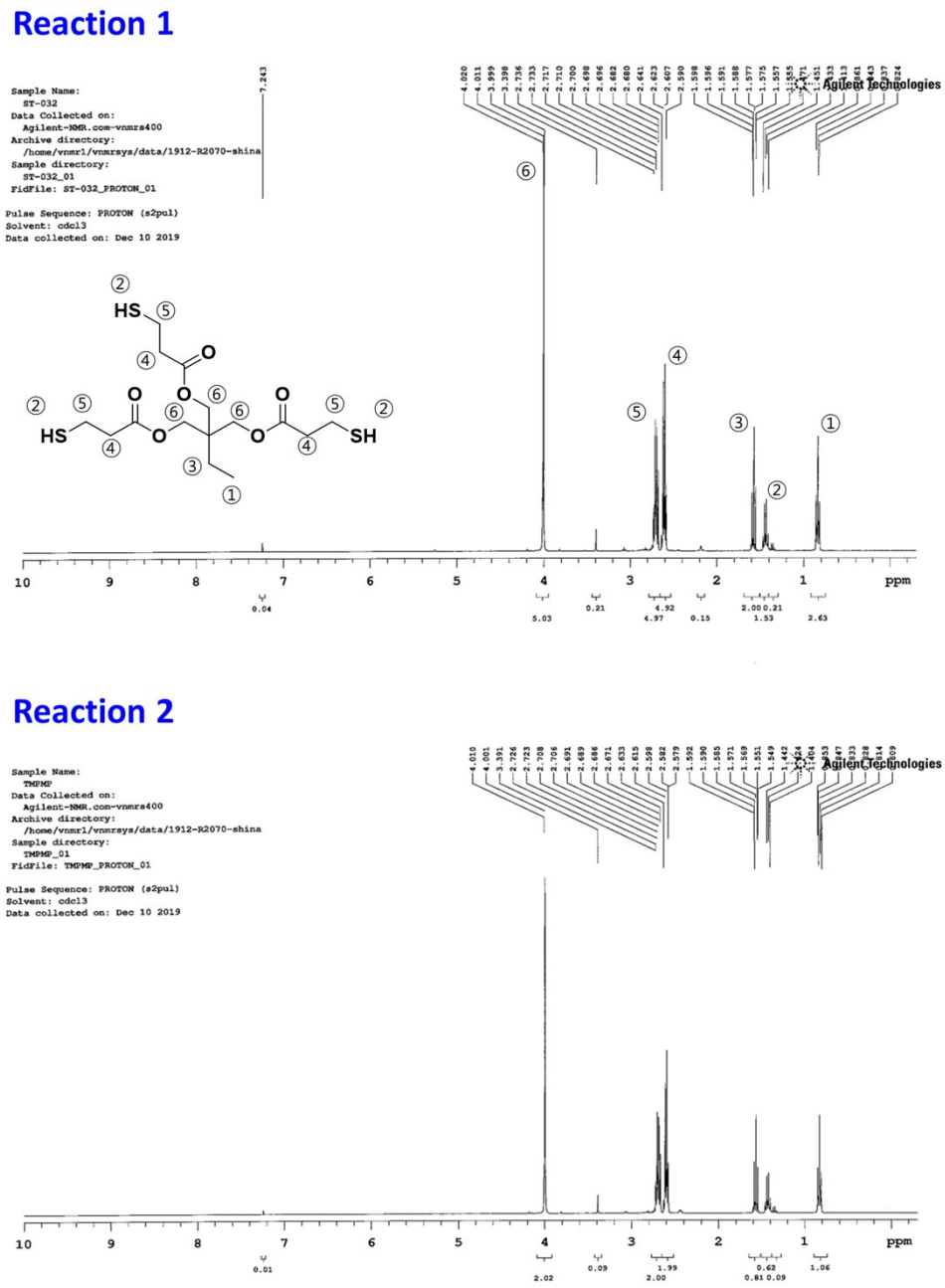


Figure S2. ^{1}H NMR spectra for crude products through direct esterification reactions (entry preEXP-1 and preEXP-2).

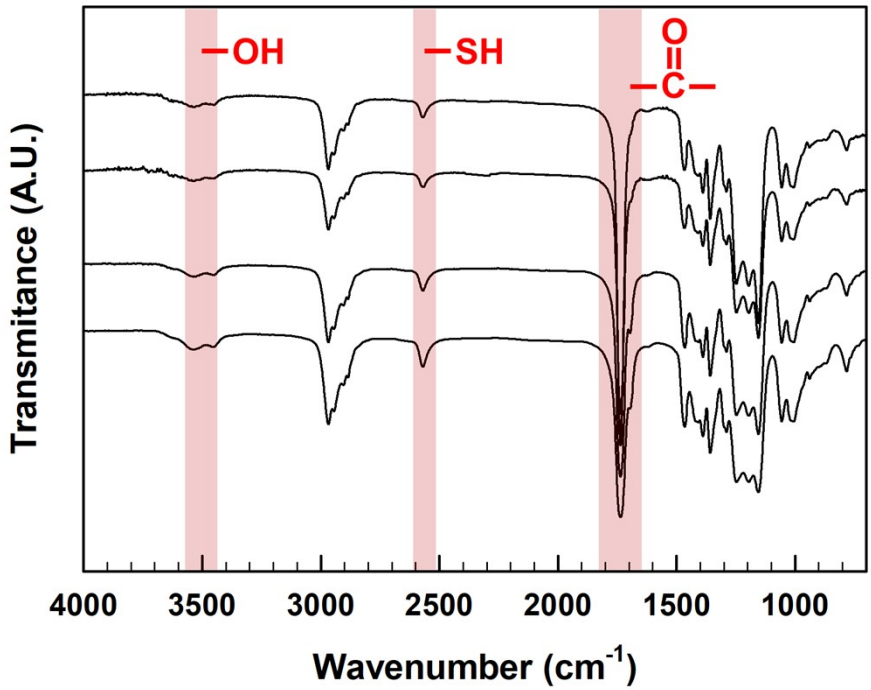


Figure S3. FT-IR spectra for crude product through direct esterification preliminary reactions (entry preEXP-1 ~ preEXP-4).

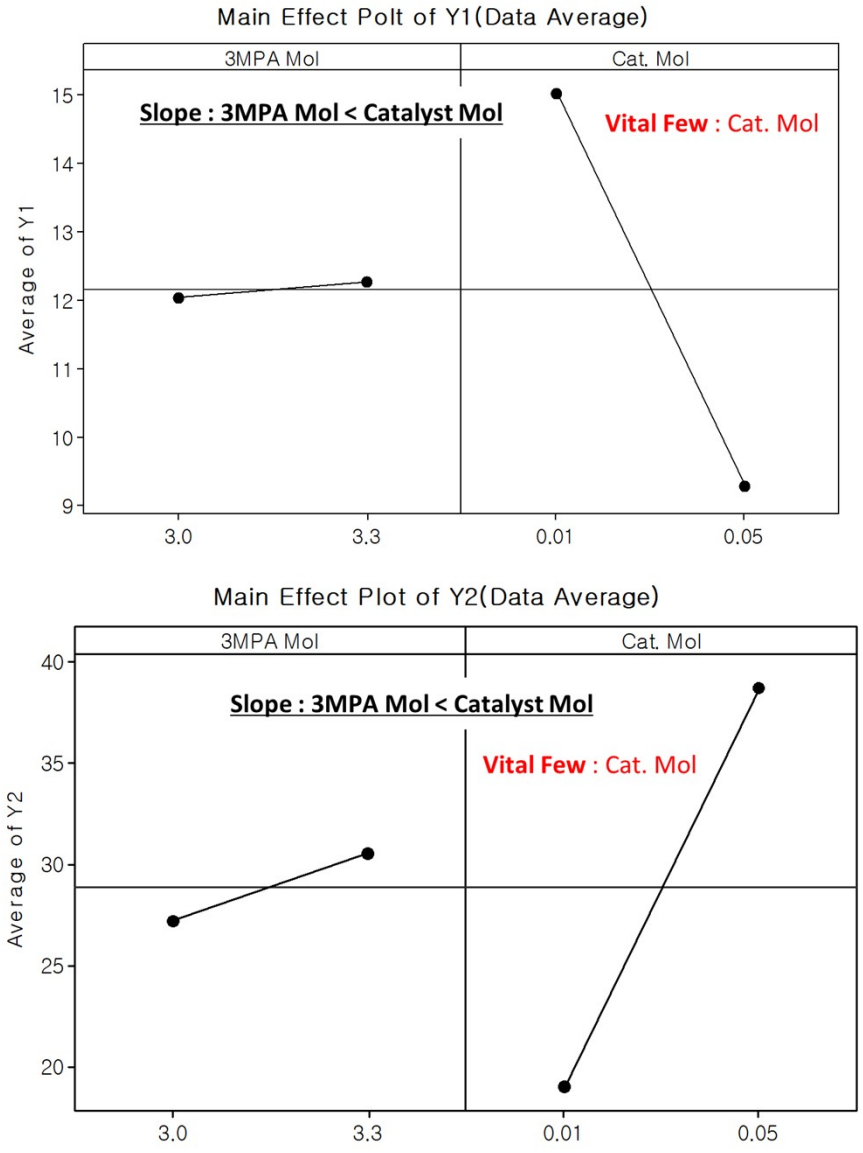


Figure S4. Synthesis parameters for the direct esterification reaction depending on reactant ratio and acid catalyst concentration.

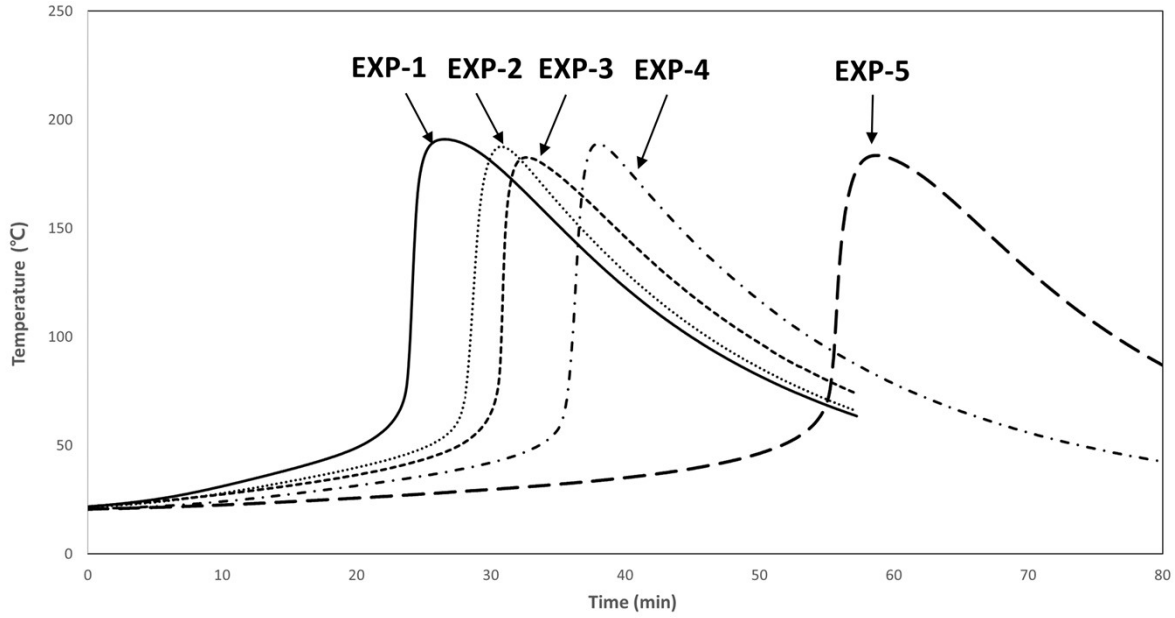


Figure S5. Thermograms corresponding to curing behavior for TMPMP-epoxy mixture with base catalyst.