

Supporting Information for:
Cross-linked Solid Electrolyte Obtained by Cationic Ring Opening
Polymerization of a Diepoxy 1,2,3-Triazolium Ionic Liquid

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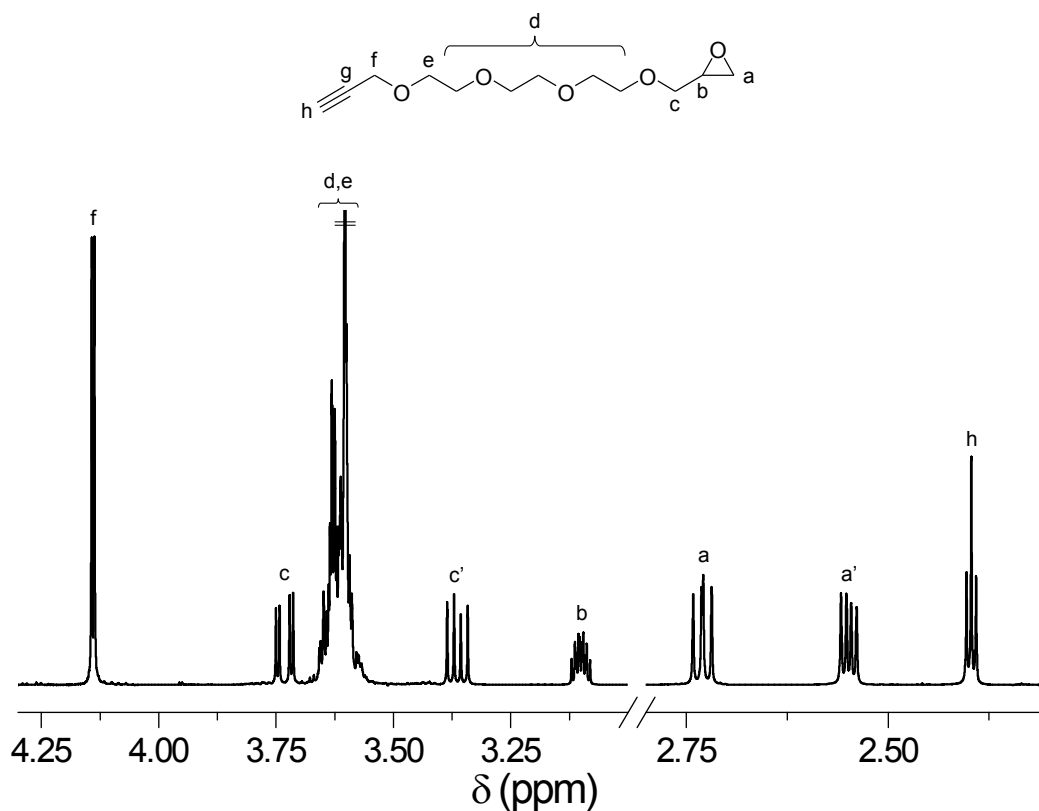


Fig. S1 ¹H NMR (25 °C, CDCl₃, 400 MHz) of 2-(2-(2-(2-prop-2-ynyloxy-ethoxy)-ethoxy)-ethoxymethyl)-oxirane **2**.

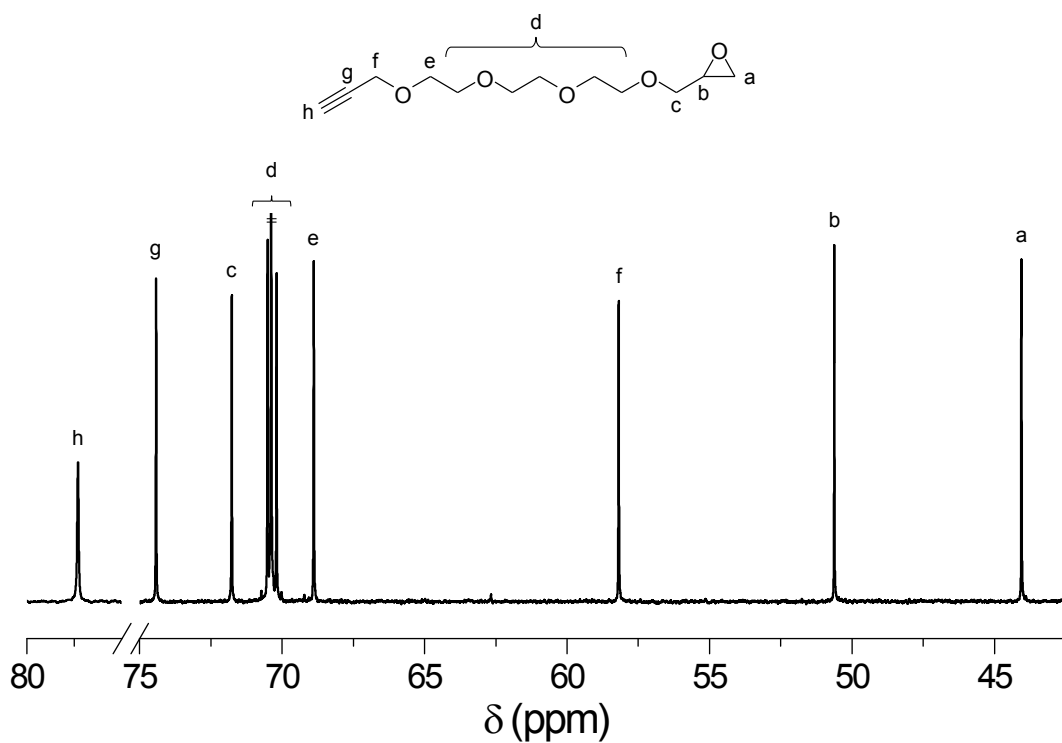


Fig. S2 ^{13}C NMR (25 °C, CDCl_3 , 100 MHz) of 2-(2-(2-(2-prop-2-ynyloxy-ethoxy)-ethoxy)-ethoxymethyl)-oxirane **2**.

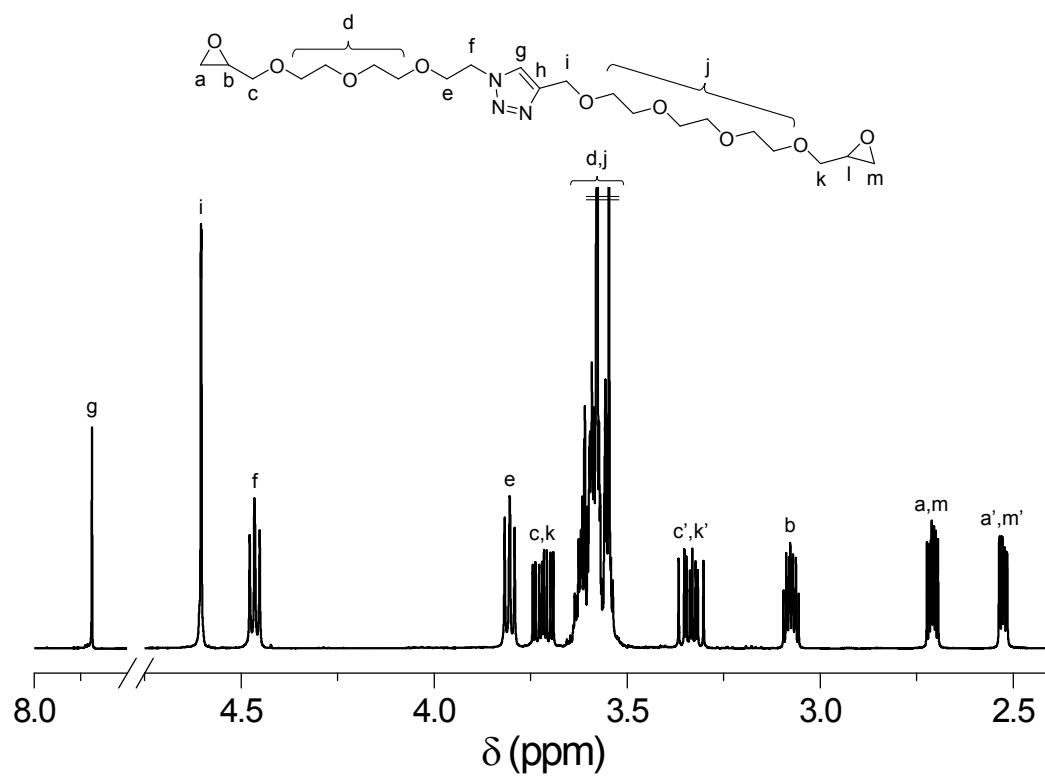


Fig. S3 ^1H NMR (25 °C, CDCl_3 , 400 MHz) of diepoxy 1,2,3-triazole **3**.

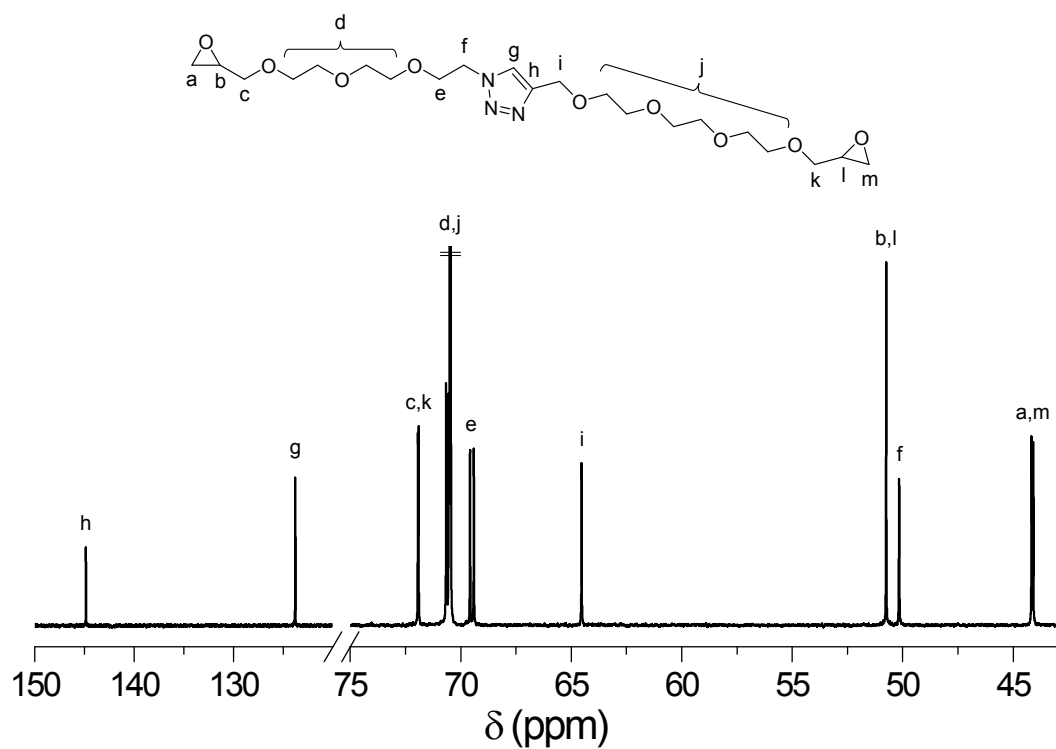


Fig. S4 ^{13}C NMR (25 °C, CDCl_3 , 100 MHz) of diepoxy 1,2,3-triazole **3**.

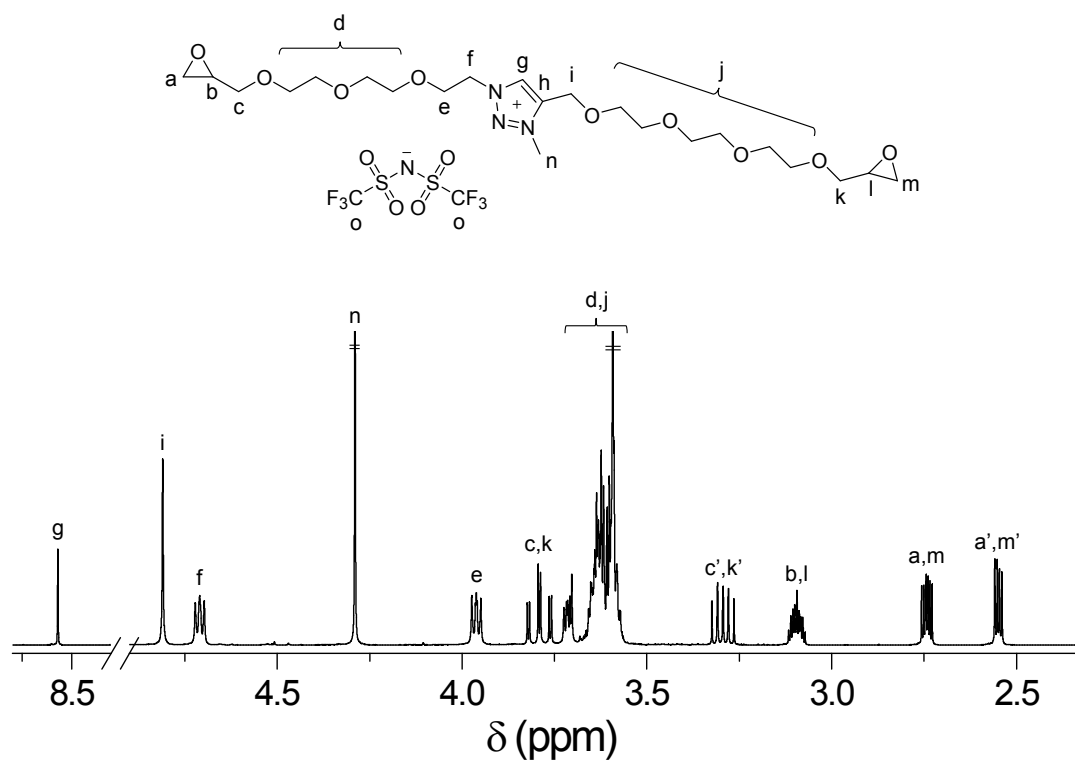


Fig. S5 ^1H NMR (25 °C, CDCl_3 , 400 MHz) of diepoxy 1,2,3-triazolium **5**.

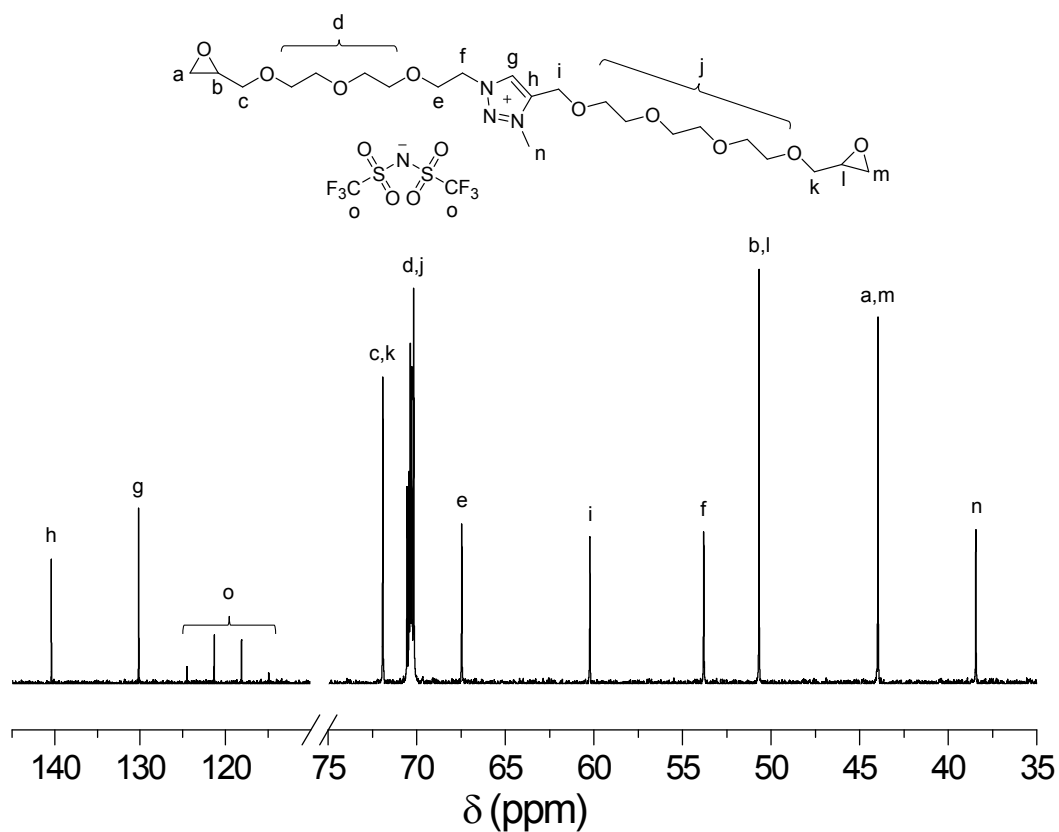
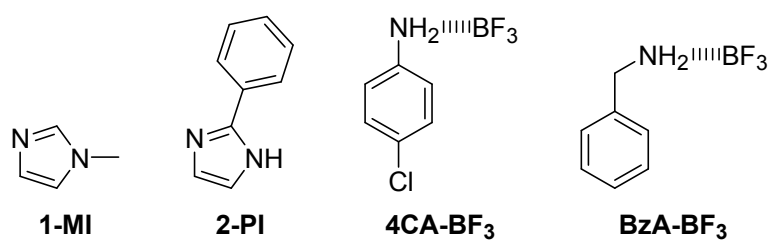


Fig. S6 ^{13}C NMR (25 °C, CDCl_3 , 100 MHz) of diepoxy 1,2,3-triazolium **5**.



Scheme S1 Chemical structures of anionic (1-MI and 2-PI) and cationic (4CA-BF₃ and BzA-BF₃) initiators investigated for the ROP of DET **5**.

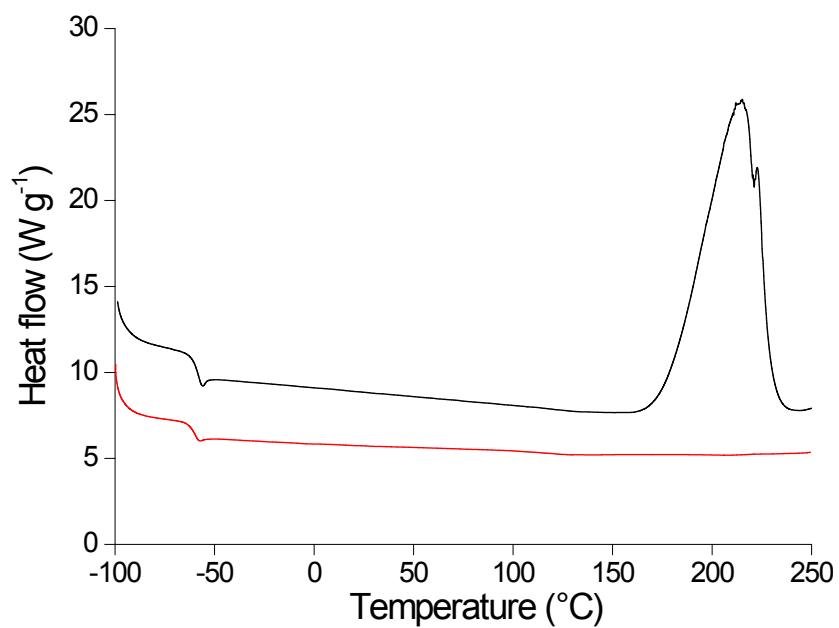


Figure S7. DSC monitoring of the thermal curing of crude DET 5 (black line), purified DET 5 (red line).

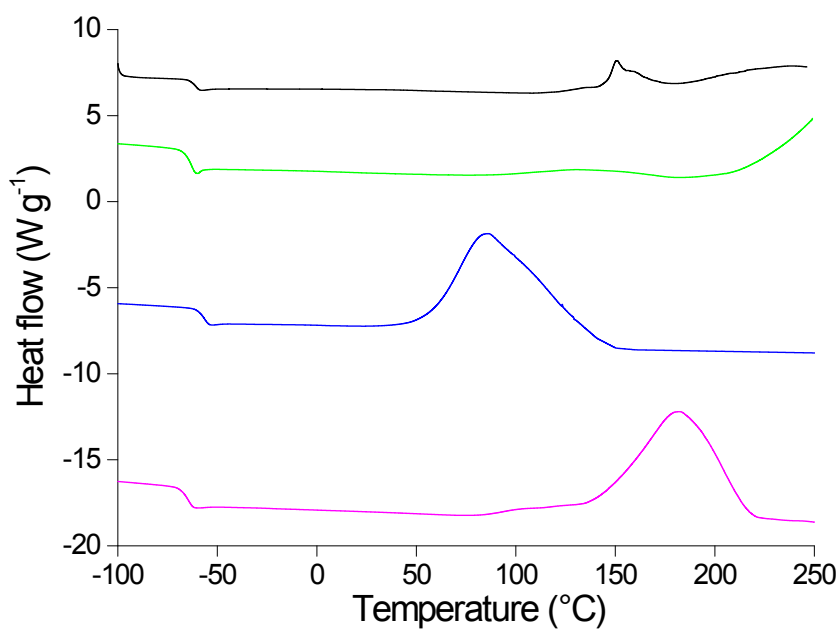


Figure S8. DSC monitoring of the thermal curing of DET 5 in the presence of 0.075 mol EE⁻¹ of 2-PI (black line), 1-MI (green line), 4CA-BF₃ (blue line) and BzA-BF₃ (pink line).

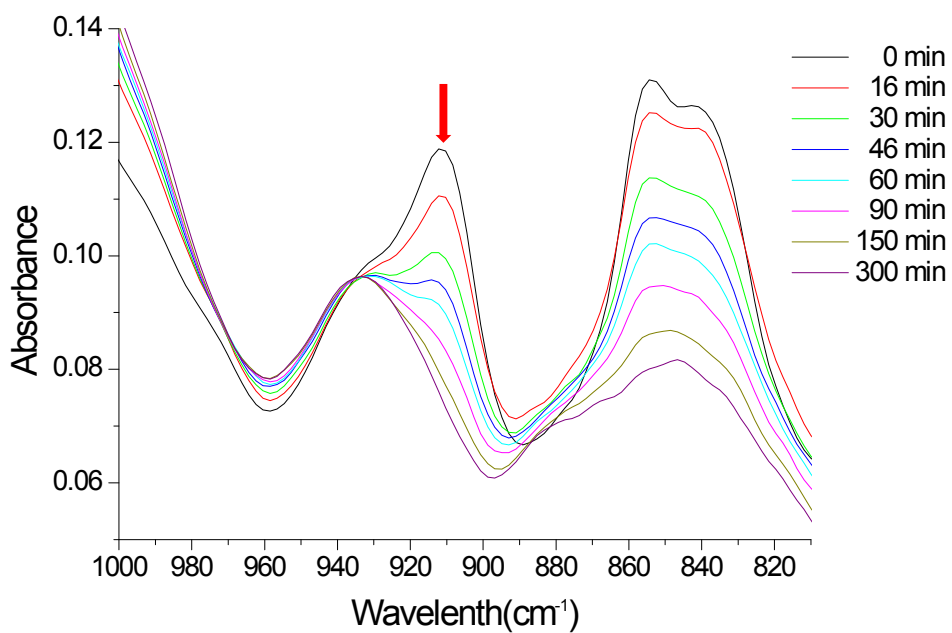


Figure S9. On-line ATR-FTIR monitoring of the cationic ROP of DET 5 at 130 °C initiated by BzA-BF₃ (0.075 mol EE⁻¹).

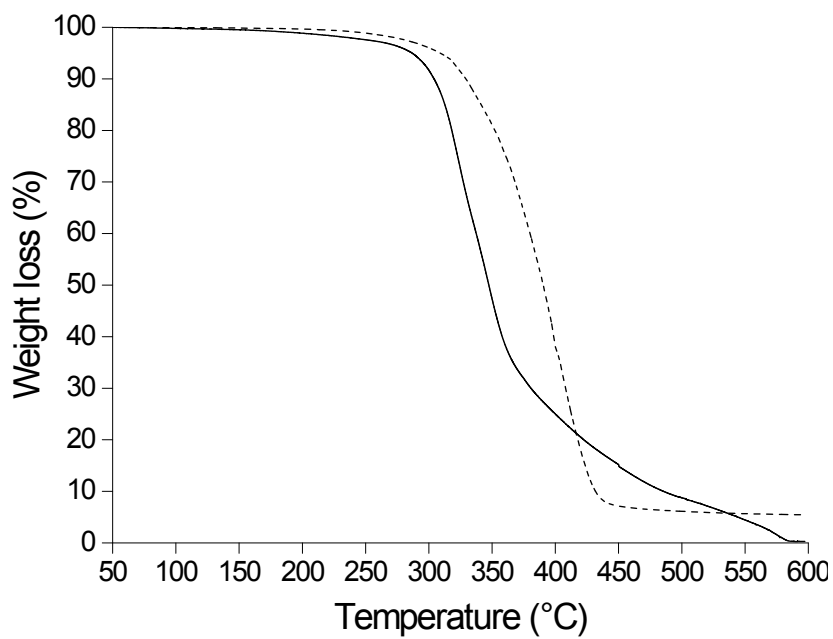


Figure S10. TGA traces of ENs 7 (solid line) and 8 (dashed line).

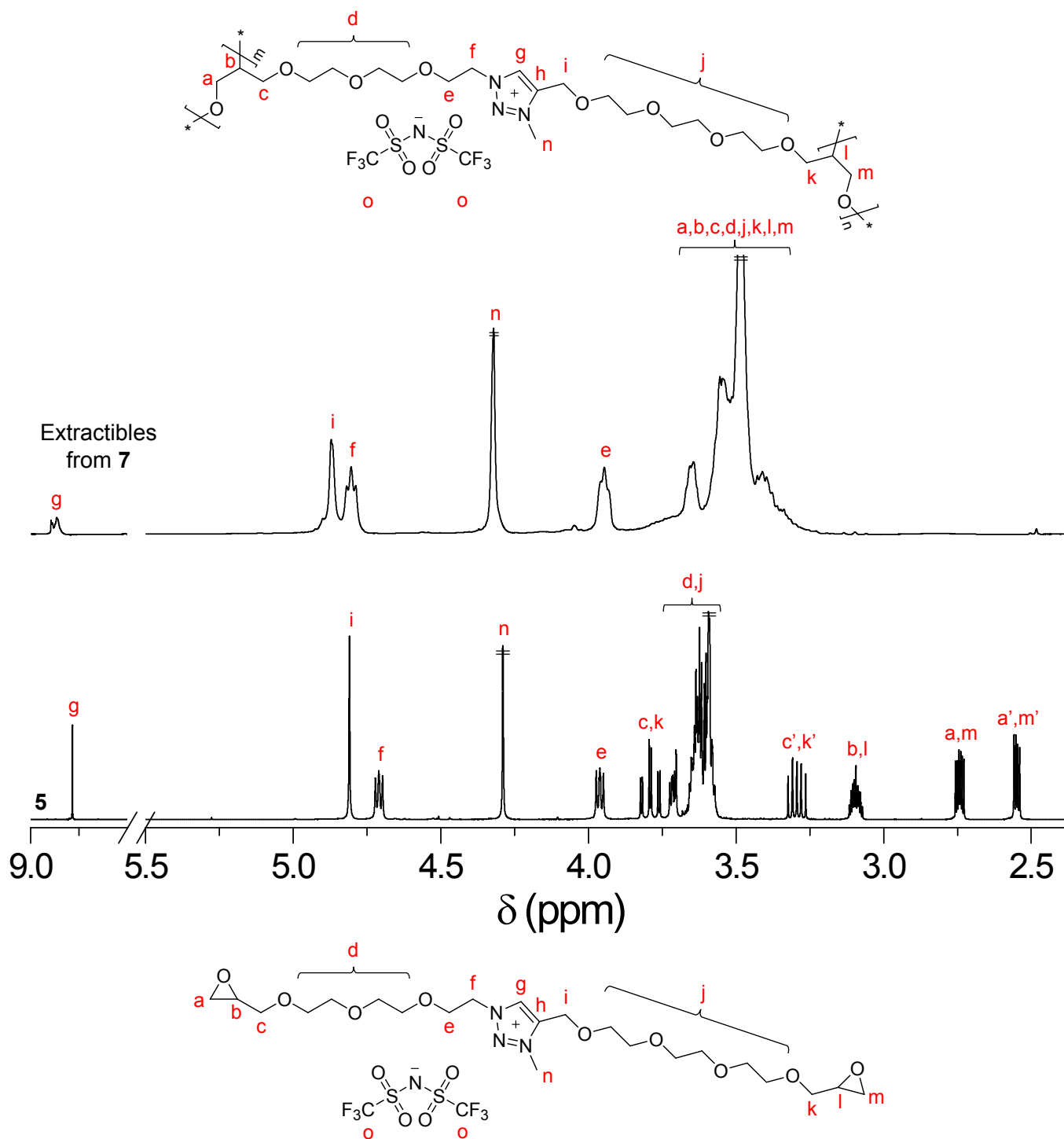


Figure S11. ^1H NMR (25 $^\circ\text{C}$, CDCl_3 , 400 MHz) of diepoxy 1,2,3-triazolium **5**. (bottom) and extractables from epoxy network **7** (top).

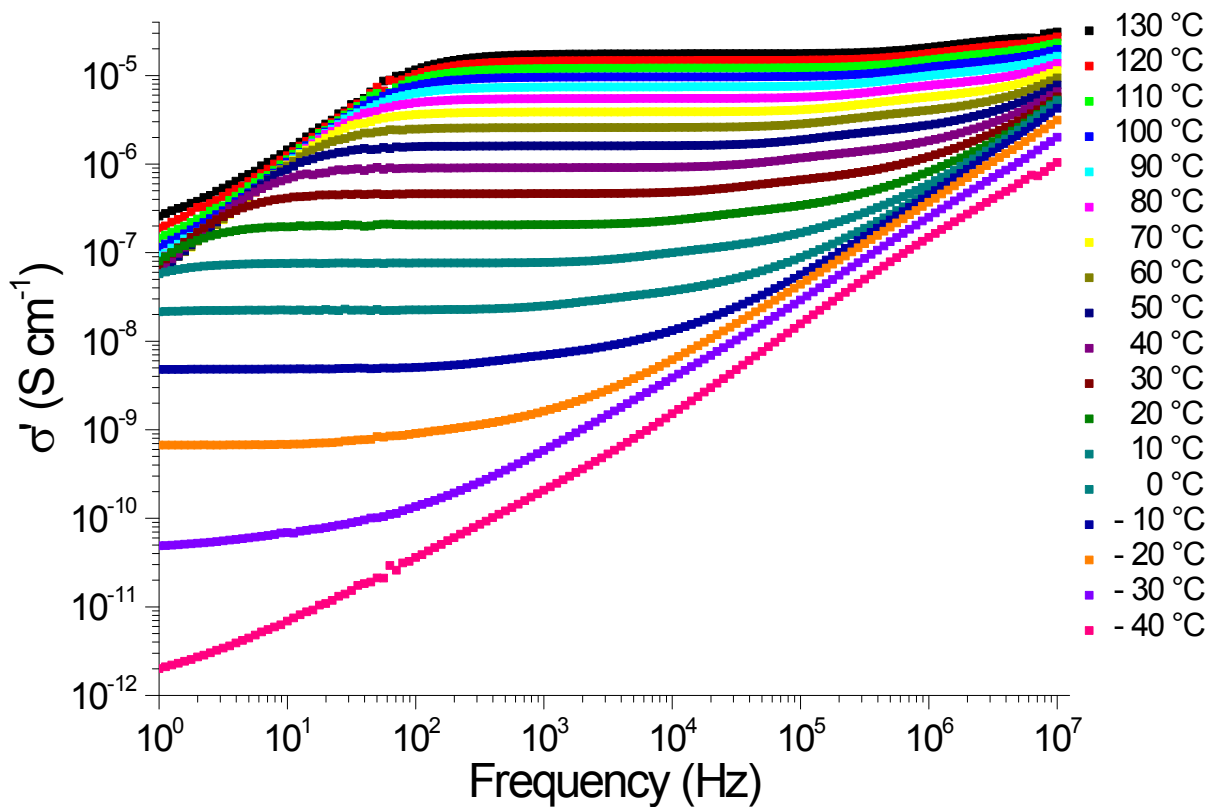
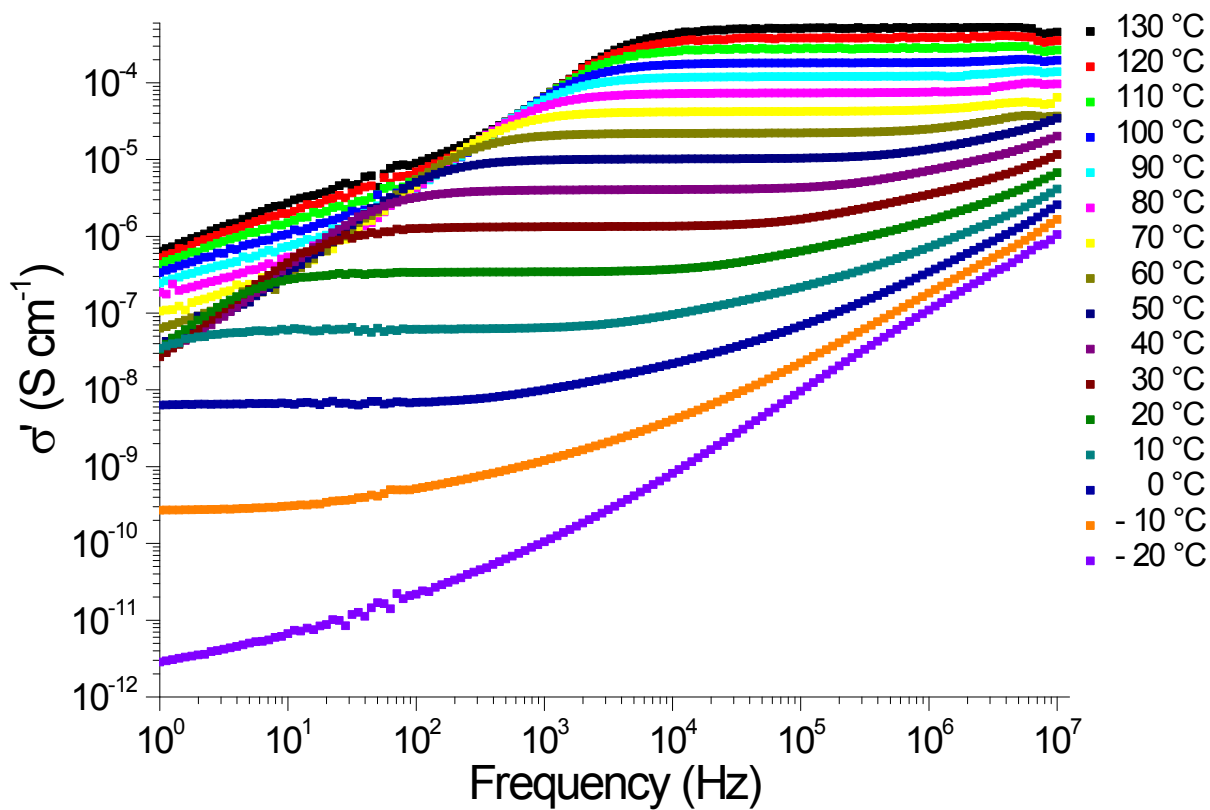


Figure S12. Conductivity σ' versus frequency at different temperatures measured by BDS for DET epoxy network **7** (top) and PEGDGE epoxy network **8** (bottom).