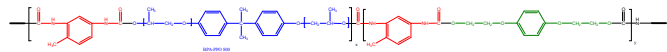


Sample Name:

Poly urethane based on Bisphenol A-dipropoxylate and bis(2-hydroxy ethylhydroquinone)and TDI-isocyanate

Sample #: P7294-PU

Structure:**Composition:**

Mw x 10 ³	Mw/Mn (PDI)	Composition
19.4	1.4	TDI:BPA-PO:BHQ 1.4:1.0:0.41 feeding ratio
		From HNMR 1.4:1.15:0.40

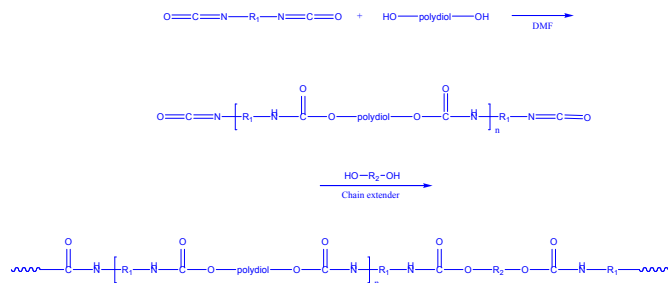
TDI: 2,4-toluenediisocyanate

BPA-PO: Bisphenol A propoxylate Mn=800

BHQ: Bis(2-hydroxyethyl) hydroquinone

Synthesis Procedure:

Polyurethane is prepared in dry DMF in two-step procedure. The reaction scheme is shown below:

**Characterization:**

The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight, polydispersity index (PDI). The composition of the structure was determined by comparing the area of 7.04ppm deduct area of 2.09ppm (TDI), 1.602ppm (BPAPO) and 4.112ppm (BHQ) in NMR spectrum.

Solubility:

TDI:BPA-PO:BHQ 1.4:1.0:0.41	Chloroform (y)	THF (Y)	DMF (Y)	DMSO (Y)	Tg oC 21
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Figure: ¹H NMR spectrum

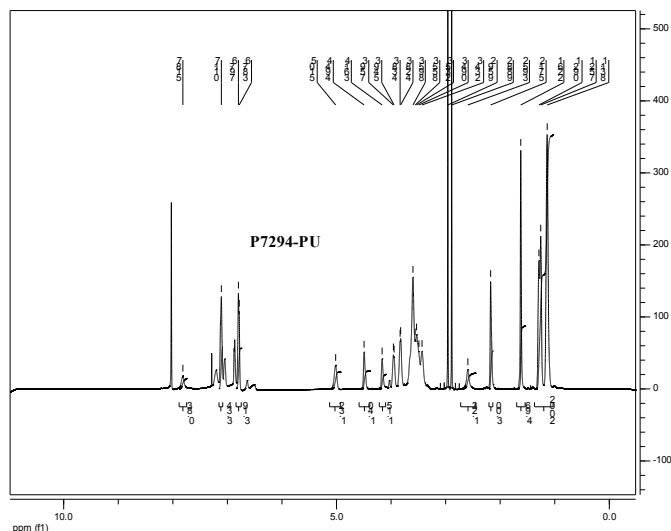
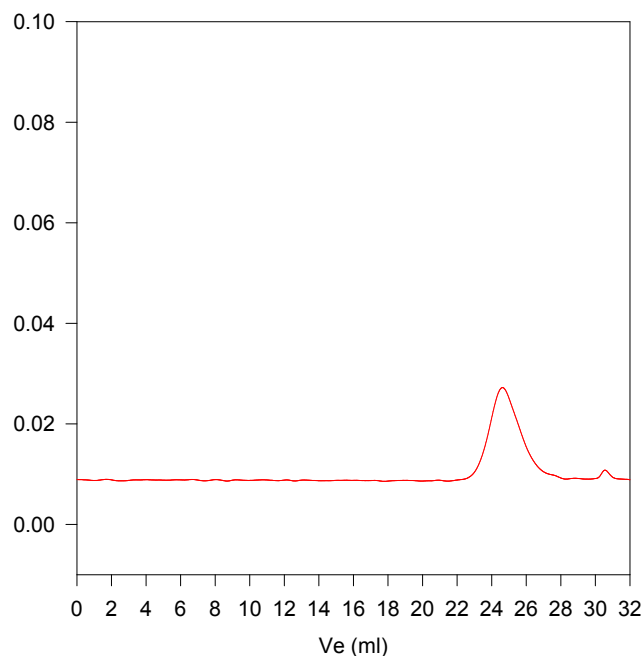


Figure: SEC profile of the polyurethane

P7294-PU

Size exclusion chromatograph (polystyrene standard)

Mw=19400, Mn=13900, PI=1.4