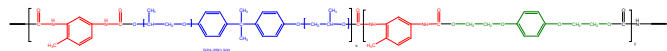


Sample Name:

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

Sample #: **P7297-PU**

Structure:



Composition:

Mw x 10 <sup>3</sup>	Mw/Mn (PDI)	Composition
16.9	1.4	TDI:BPA- PO:BHQ <b>1.5:1.0:0.51</b> feeding ratio From HNMR <b>1.5:0.89:0.67</b>

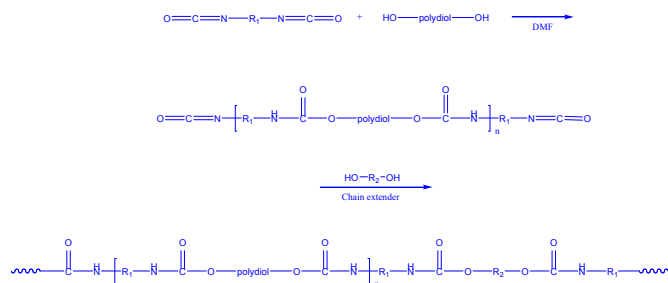
TDI: 2,4-toluenediisocyanate

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:**

An aliquot of the copolymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The chemical composition was verified by <sup>1</sup>H-NMR spectroscopy, which is run in deuterated chloroform at 400MHz. The glass-transition temperature was measured by DSC.

**Solubility:**

TDI:BPA- PO:BHQ <b>1.5:1.0:0.51</b>	Chloroform (y)	THF (Y)	DMF (Y)	DMSO (Y)	Tg oC 22
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The polyurethane based on TDI and BPA-PO is soluble in THF, DMF, DMSO and chloroform. And it precipitated out from ether and hexanes.

Figure: <sup>1</sup>H NMR spectrum

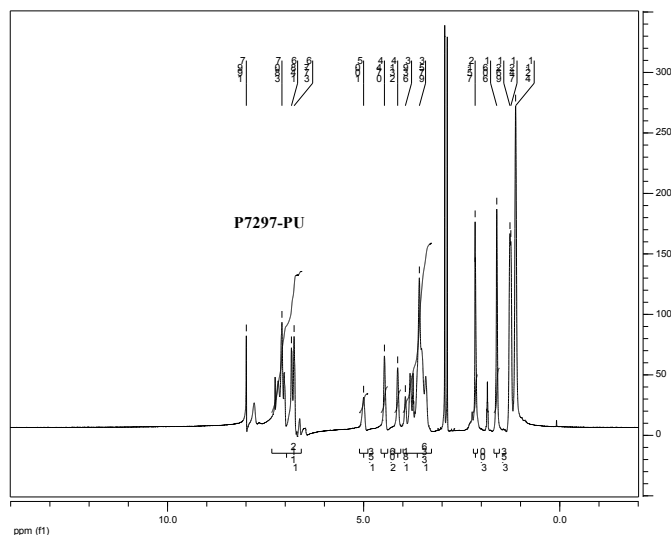
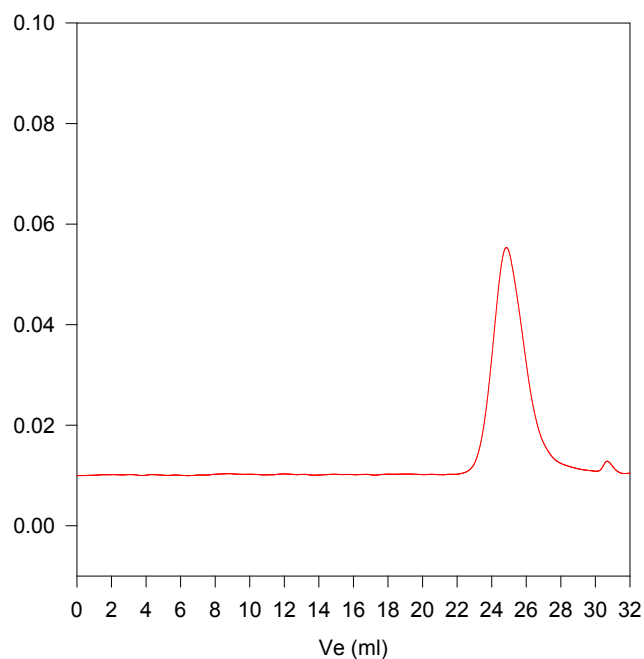


Figure: SEC profile of the polyurethane

**P7297-PU**



Size exclusion chromatograph ( polystyrene standard)

Mw=16900, Mn=12100, PI=1.4