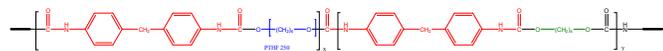


Sample Name:
Polyurethane with shape memory properties

Sample #: P4847-PU

Structure:



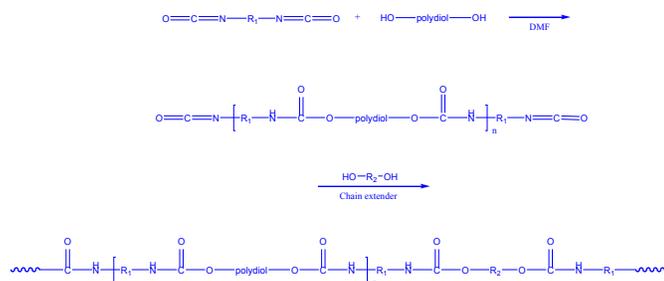
Composition:

Mn x 10 ³	Mw/Mn (PDI)	Composition
6.5	1.78	MDI:PTMO:BDL 6.0:1.0:5.0

MDI: 4,4'-Methylenebis(phenyl isocyanate)
 PTMO: Poly(tetramethylene oxide) Mn=250
 BDL: 1,4-Butanediol

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 ¹H-NMR spectroscopy, which is run in deuterated DMSO at 400MHz. The glass-transition temperature was measured by DSC.

Solubility:

The polyurethane based on MDI and PTMO is soluble in THF, DMF, and DMSO. Chloroform is non-solvent for this composition. It precipitated out from ether and hexanes.

Figure: ¹H NMR spectrum

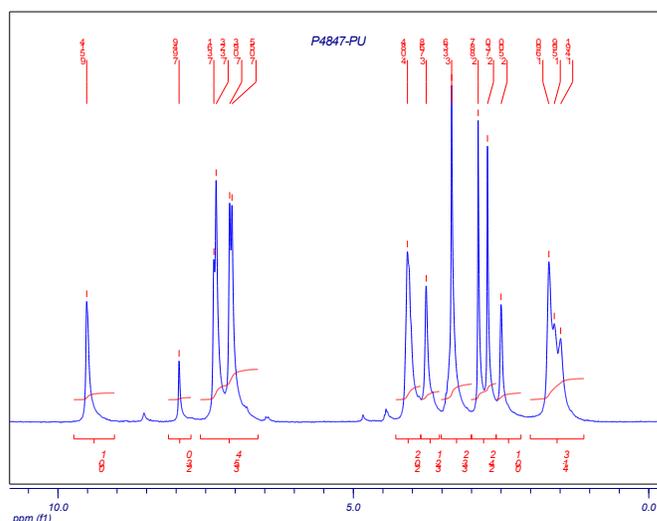


Figure: SEC profile of the polyurethane

