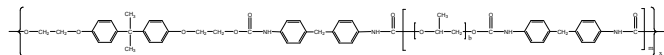


Sample Name:

**Poly urethane based on Bisphenol A-diethoxylate and propylene glycol and MDI-isocyanate.**

Lot Sample #: **P7283-PU**

**structure**



**Composition**

Mw x 10 <sup>3</sup>	Mw/Mn (PDI)	Composition
10.8	1.9	MDI:PPO:BPAE O 1.35:1.0:0.36
		From HNMR 1.35:0.82:0.41

MDI: 4,4'-Methylenebis(phenyl isocyanate)

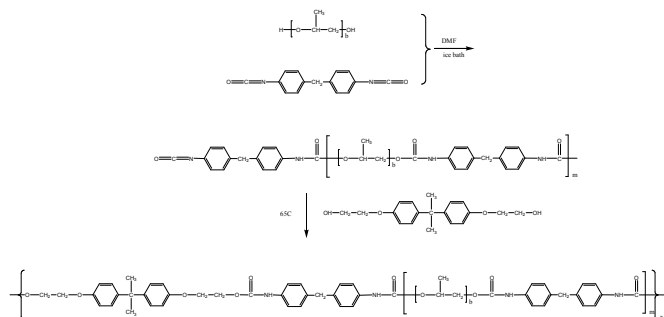
PPO: Poly propylene glycol Mn= 425

BPAEO: BisphenolA diethoxylate

**Reference:** US patent 5135786 and 5155199

**Synthesis Procedure:**

The synthesis method was followed the literature offered by costumer. The scheme of the reaction is illustrated below:



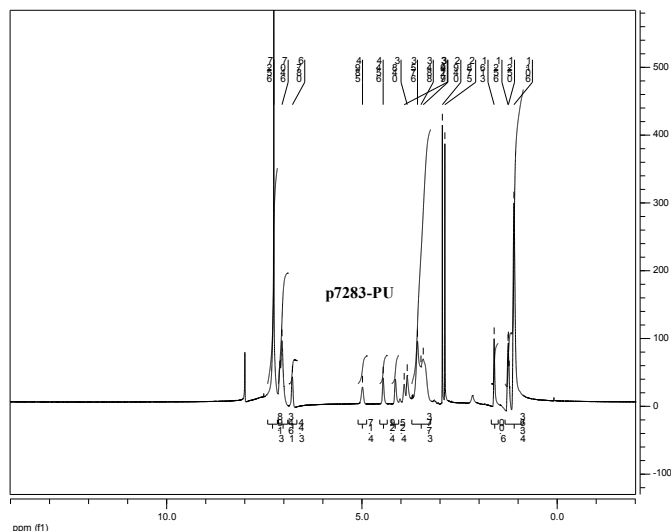
**Characterization:**

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 6.780ppm (MDI), 1.0-1.4ppm (PPG) and 1.59ppm (BOAEO) in NMR spectrum.

**Solubility:**

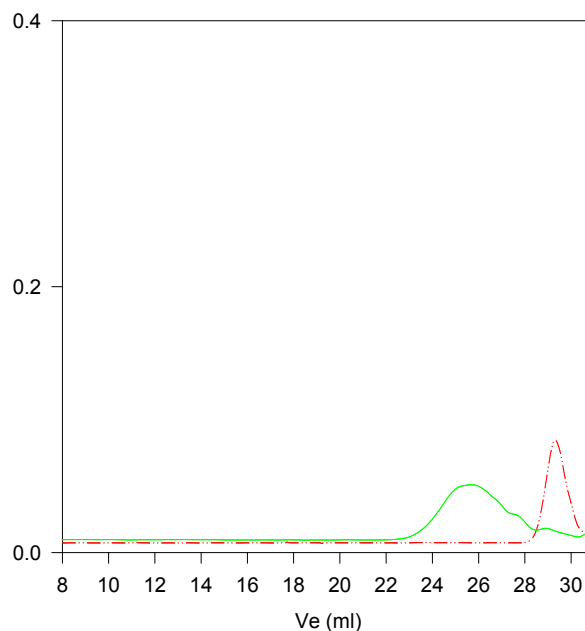
MDI:PPO:BPAEO 1.35:1.0:0.36	Chloroform Y	DMF Y	THF Y	DMSO Y (slow)	Tg 23 oC
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**<sup>1</sup>H-NMR of the product**



**SEC of the product:**

**P7283- PU**



Size exclusion chromatography:

--- Polypropylene glycol,  
M<sub>n</sub>=425, M<sub>w</sub>=500, PI=1.18

— Final polymer polyurethanes Mw=10800 Mn=5700, PI=1.9