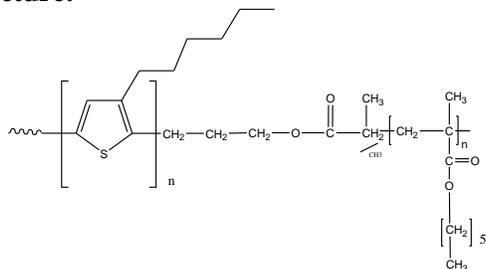


Sample Name:
Poly (3-hexyl thiophene-b-n-Hexyl methacrylate)

Sample #: **P13175-3HTnHexMA**

Structure:



Composition:

Mn x 10 ³ (3HT-b-HexMA)	PDI	Regioregularity of P3HT
12.0-b-55.0	2.3	~90% (H-T)
Final block copolymer contain about 20% of homopolyhexyl thiophene. Based on RI detection integration		

Synthesis Procedure:

Purification of polymer:

The crude polymer was recovered from reprecipitation into methanol. The inorganic salts were removed by using a Soxhlet extraction with Methanol and homopoly hexyl thiophene was removed by extraction with hot cyclohexane. The pure polymer was dissolved in chloroform and precipitated in cold acetone

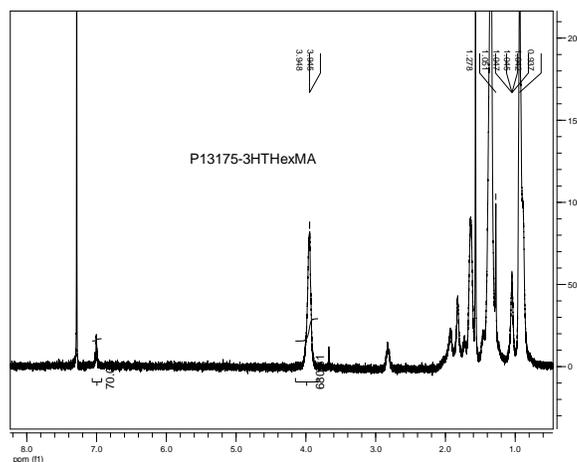
Characterization:

The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF or Chloroform. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co. The molecular weight is calculated based on polystyrene standards. The NMR spectrum was recorded in deuterated chloroform to determine the functionality and the composition of copolymer.

Solubility:

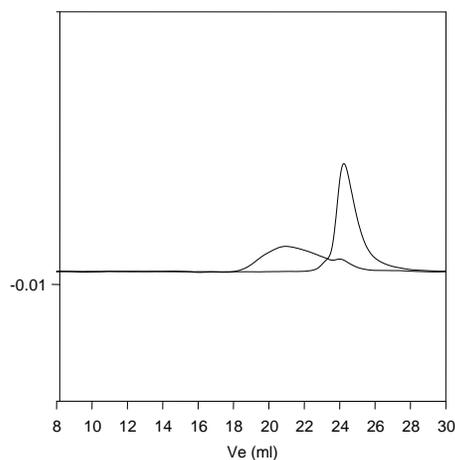
Poly(3-hexyl thiophene-b-nhexylmethacrylate) is soluble in THF, Toluene and CHCl₃. It precipitates from methanol and hexane.

¹H NMR spectrum of hydroxy terminated poly(3-hexylthiophene):



SEC profile of polymers:

P13175-3HTHexMA



Poly Hexyl Thiophene Mn 12,000 Mw/Mn 1.20

Poly Hexyl thiophene-b-nhexyl methacrylate Mn : 12000-b-55000 Mw/Mn : 2.3