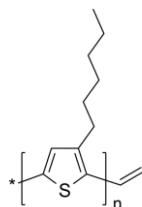


Sample Name: Poly(3-hexylthiophene-2,5-diyl), ω -vinyl-terminated

Sample #: P43694-3HTvinyl

Structure:



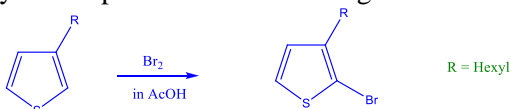
Composition:

Mn x 10 ³	PDI
11.0	1.17

Regioregularity ~90% (H-T)

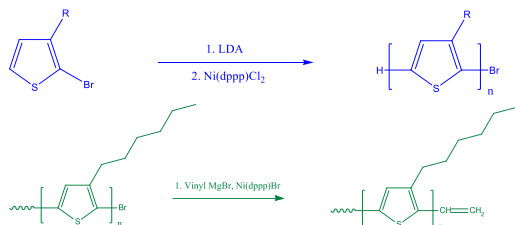
Synthesis Procedure:

1. Monomer synthesis:
2-bromo-3-hexyl thiophene was prepared according to literature, the brief synthetic procedure as following:



2. Polymerization:

The obtained monomer was polymerized by the means of Grignard metathesis (GRIM).



3. Purification of polymer:

The crude polymer was recovered from reprecipitation into methanol. The inorganic salts were removed by using a Soxhlet extractor with Methanol. The pure polymer was dissolved in chloroform by the same extractor.

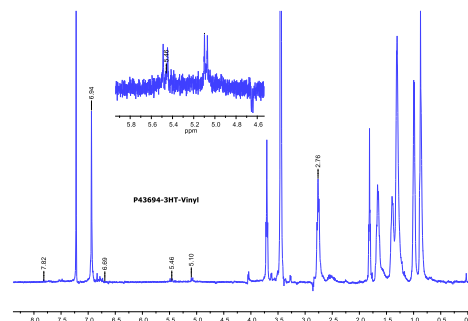
Characterization:

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.

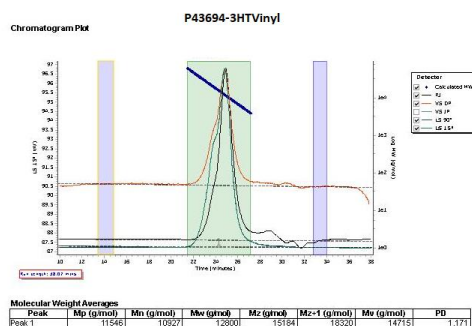
Solubility:

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

H NMR spectrum of the polymer:



SEC elugram of the Sample:



Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mz (g/mol)	PDI
1	11546	10007	12500	15184	18220	14715	1.171