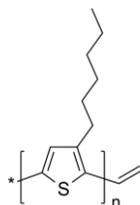


**Sample Name: Poly(3-hexylthiophene-2,5-diyl),  $\omega$ -vinyl-terminated**

**Sample #: P43694-3HTvinyl**

**Structure:**



**Composition:**

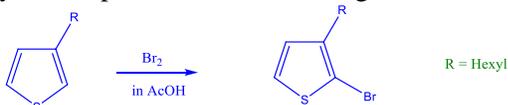
Mn x 10 <sup>3</sup>	PDI
11.0	1.17

Regioregularity ~90% (H-T)
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**Synthesis Procedure:**

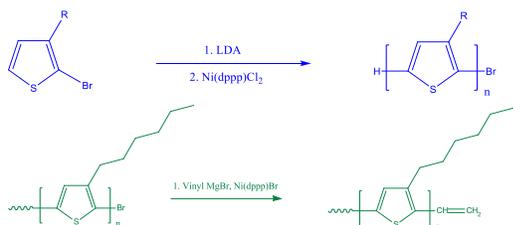
1. Monomer synthesis:

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.

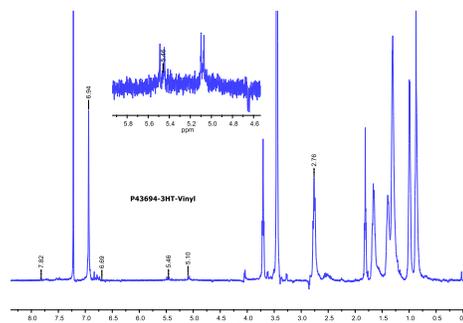
**Characterization:**

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 CHCl<sub>3</sub>. It precipitates from methanol.

**H NMR spectrum of the polymer:**



**SEC elugram of the Sample:**

