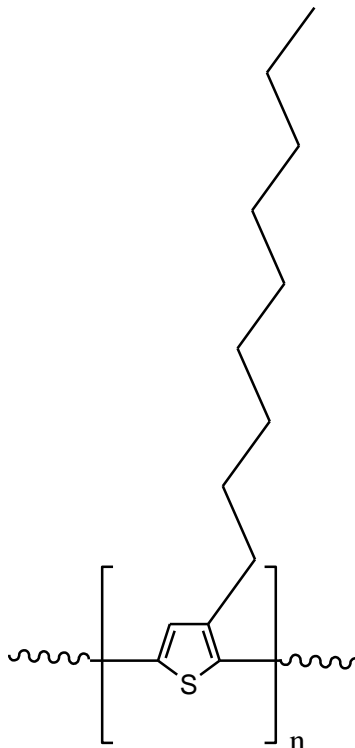


Sample Name: Poly(3-nonyl thiophene)

Sample #: P14247-3NT

Structure:



Composition:

Mn x 10 ³	PDI	
3.5	1.25	

Synthesis Procedure:

1. Monomer synthesis:

2,5-Dibromo-3 nonyll thiophene was prepared
Polymerization: The obtained monomer was polymerized by the means of Grignard metathesis (GRIM).

2. 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:

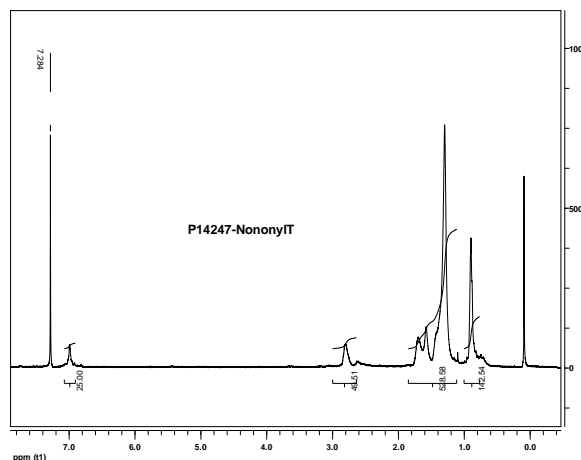
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF or Chloroform. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were 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:

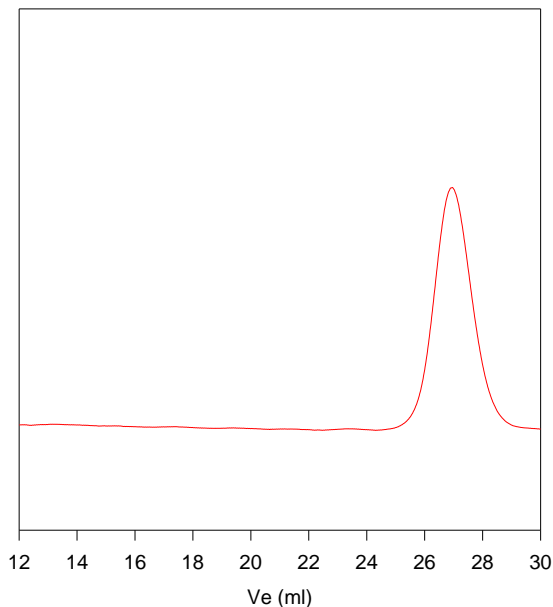
Poly(3-nonyl thiophene) is soluble in THF, Toluene and CHCl₃. It precipitates from methanol and acetone.

H NMR of polymer:



SEC of Homopolymer:

P14247-3NT



Size exclusion chromatography of Polymer:

— M_n=3500, M_w=4400, M_w/M_n=1.25,