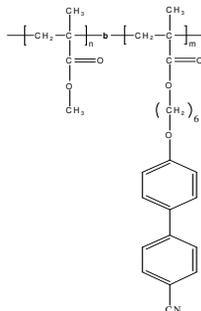


Sample Name:

Poly(Methylmethacrylate-b-6-(4'-cyanobiphenyl-4-yloxy)hexylmethacrylate)

Sample #: P8961-MMA4CNBPBMA

Structure:

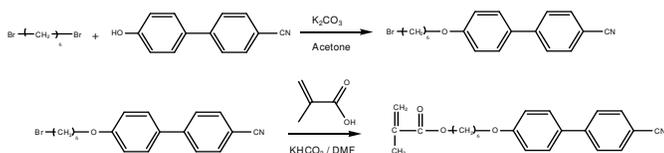


Composition:

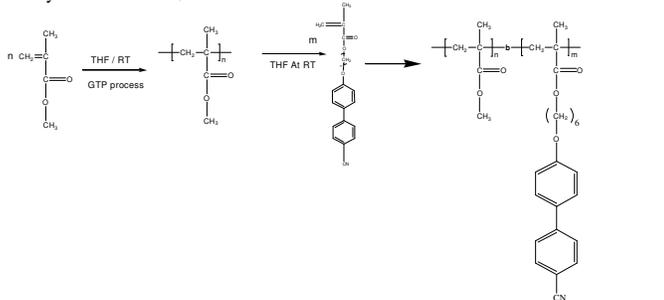
Mn x 10 ³ MMA-b-4CNBPBMA	Mw/Mn (PDI)
7.5-b-2.5	1.13
T _g for MMA block:	97°C

Synthesis Procedure:

Poly(methylmethacrylate-b-6-(4'-cyanobiphenyl-4-yloxy)hexylmethacrylate) is prepared by GTP-polymerization or anionic living polymerization of MMA with 6-(4'-cyanobiphenyl-4-yloxy)hexylmethacrylate) in THF. 6-(4'-cyanobiphenyl-4-yloxy)hexylmethacrylate) monomer is synthesized by the following routes:



Polymerization;



Characterization:

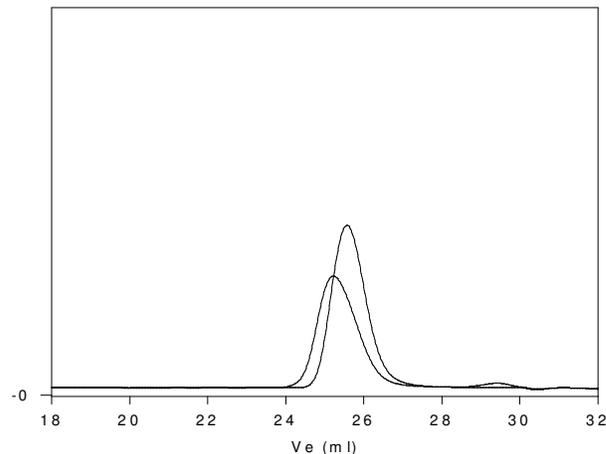
Polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the MMA protons near 3.6 ppm with the 4CNBPBMA protons at about 7.5 ppm. (biphenyl protons).

Solubility: The polymer is soluble in THF, chloroform and toluene. It is precipitated in methanol.

Thermal analysis: Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min.

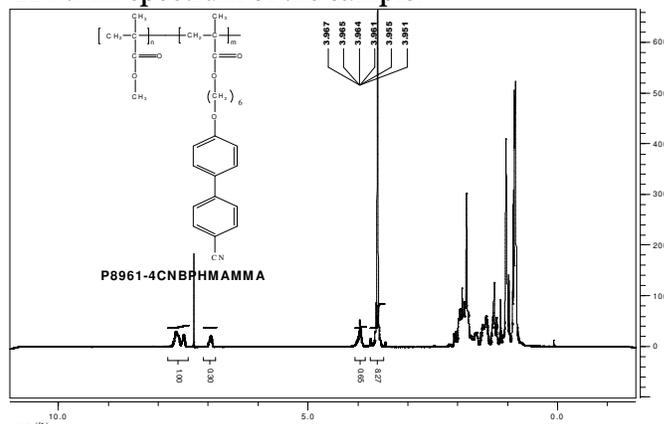
SEC of the Polymer:

P8961-MMA4CNBPBMA



— Poly(methyl methacrylate) M_n=7500, M_w=8200, PI=1.10
— Block Copolymer PMMA(7500)-b-P4CNBPBMA(2500), PI=1.13

¹H NMR spectrum of the sample:



DSC thermogram for the sample:

