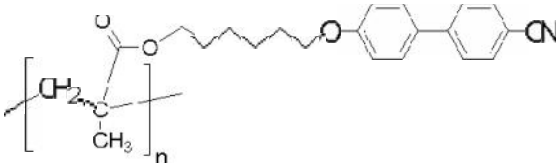
Sample Name:
Poly[6-[4-(4-cyanophenyl)phenoxy]hexyl methacrylate] or

Poly(6-(4'-cynaobiphenyl-4-yloxy)hexyl methacrylate)
Sample #: P8957-4CNBPHMA

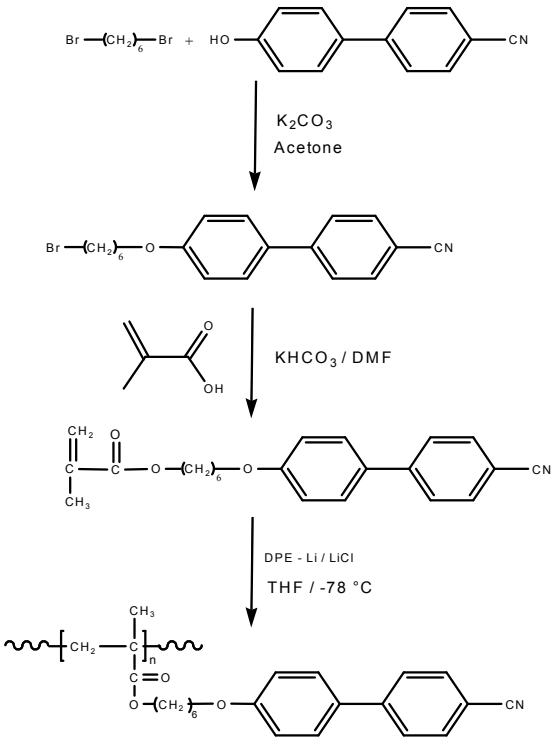
Structure:



Composition:

Mn x 10^3	PDI
18.0	1.19
Liquid crystal transition, T_g (°C)	49
T_m (°C)	110

Synthesis Procedure:
Poly(6-(4'-cynaobiphenyl-4-yloxy)hexyl methacrylate) is obtained by living anionic polymerization of the monomer. The reaction scheme used for the polymer synthesis is shown below:

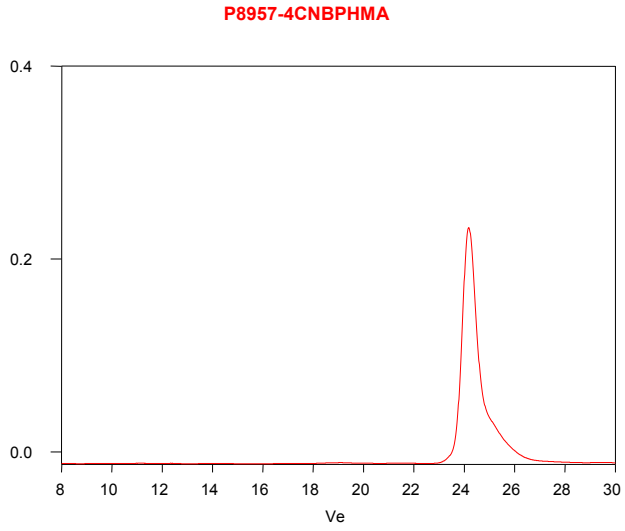


Characterization:
The molecular weight and polydispersity index (PDI) of Poly(6-(4'-cynaobiphenyl-4-yloxy)hexyl methacrylate) are obtained by size exclusion chromatography.

Thermal Analysis:
Thermal analysis was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g). The melting temperature (T_m) was taken as the maximum of the endothermic peak during heating ramp.

Solubility:
Poly(6-(4'-cynaobiphenyl-4-yloxy)hexyl methacrylate) is soluble in THF, acetone, dichloromethane and chloroform but insoluble in hexane, ethanol and water.

SEC of Homopolymer:



Size Exclusion Chromatography of:
Poly[6-[4-(4-cyanophenyl)phenoxy]hexyl methacrylate]
M_w= 18000, M_n=21400, M_w/M_n=1.19

DSC thermogram for the polymer: