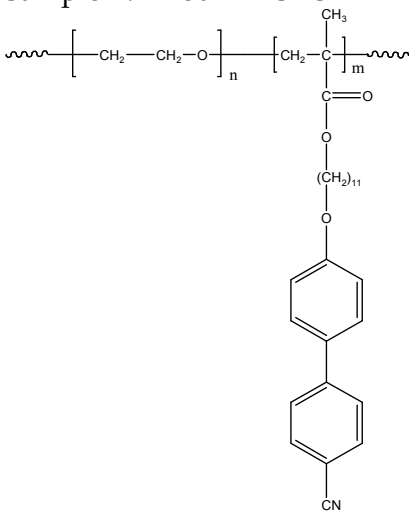
Sample Name:
Poly(ethylene oxide-b-11-(4′-cyanobiphenyl-4-yloxy) undecyl methacrylate

Sample #: ***P15012-EO4CNBP11CMA***



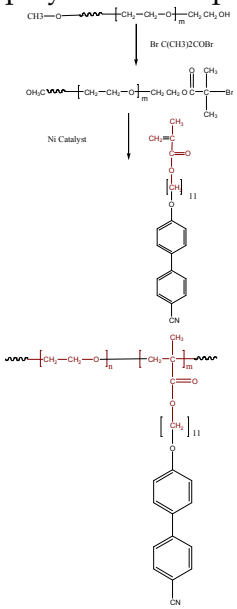
Structure:

Composition:

Mn x 10^3 PEO-b-4CNBP11CMA	PDI
5.0-b-6.5	1.20
Microstructure of 4CNBP11CMA	Syndio:hetero:iso 53:32:15

Synthesis Procedure:

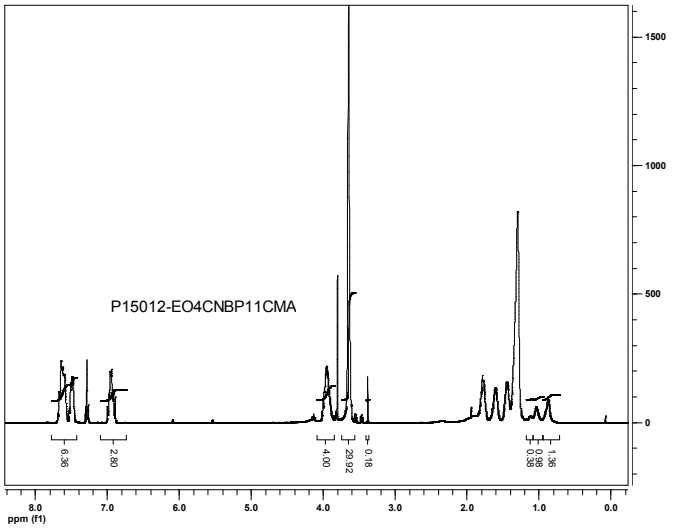
Polymer is synthesized by controlled radical polymerization process.



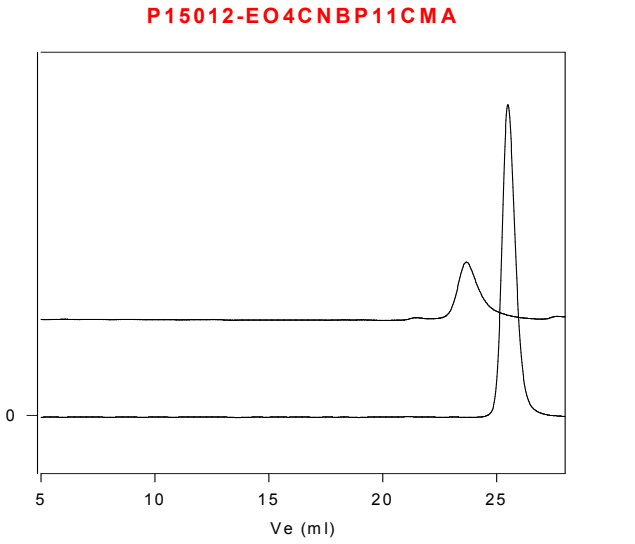
Purification of the polymer:
The un-reacted PEG can be removed by stirring the polymer in hot water/Methanol. The obtained polymer dissolved in $CHCl_3$/toluene and pass through the column packed with silica. The polymer was recovered by precipitation in cold ether/hexane mixture.

Solubility:
Polymer is soluble in $CHCl_3$, THF and toluene. The polymer precipitated out from hexane.

HNMR of the Product:



SEC of the block copolymer:



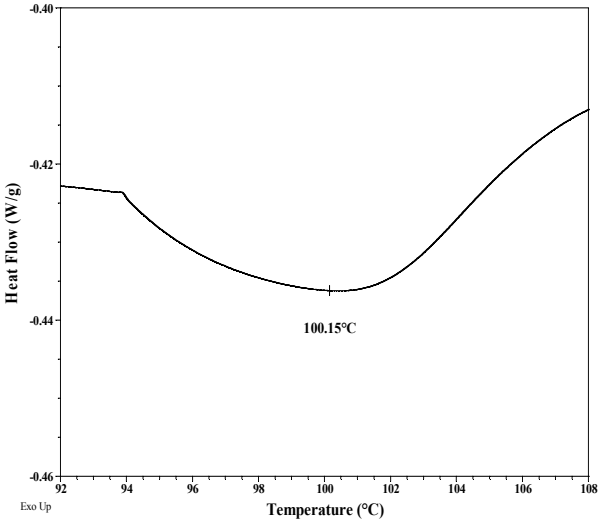
Size exclusion chromatography of the product:
—— Poly(ethylene oxide), M_n=5000, M_w=5200, PI=1.04
—— Block Copolymer PEO(5000)-b-4-CNBP11CMA (6500), PI=1.2

Thermal analysis of *P15012-EO4CNBP11CMA*

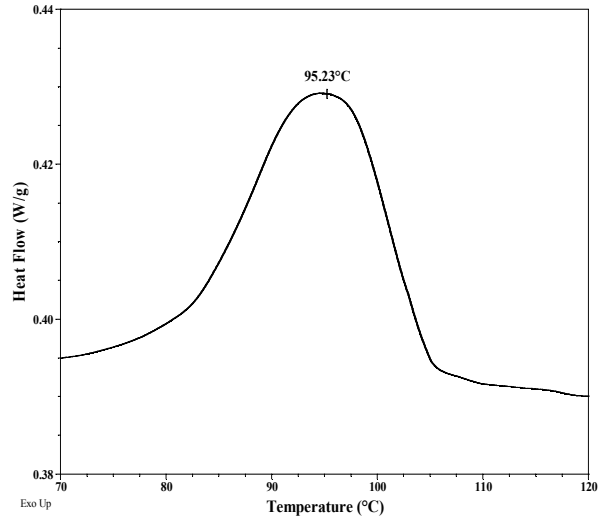
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min.The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Melting and crystallization curve for the sample
The melting temperature (T_m) was taken as the maximum of the endothermic peak where as the crystallization temperature (T_c) was considered as the minimum of the exothermic peak.

Melting curve for EO4CNBPHMA



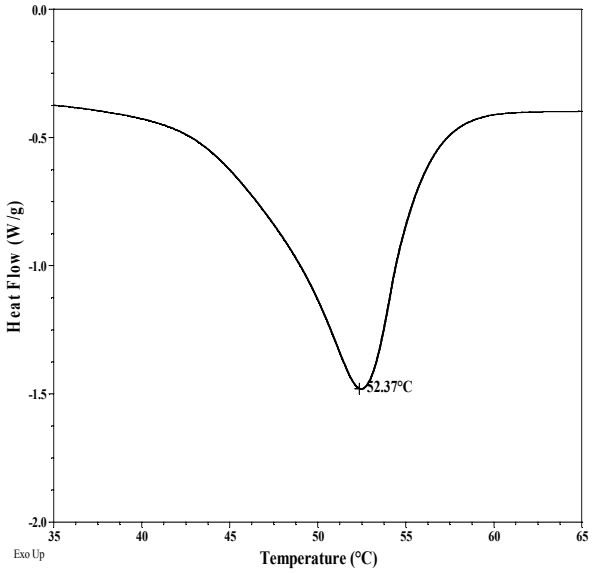
Crystallization curve for EO4CNBPHMA



Thermal analysis results at a glance:

Sample	T_m (°C)	T_c (°C)	T_g (°C)
EO	52	20	11
4CNBPHMA	100	95	-

Melting curve for PEO block:



Crystallization curve for PEO block: