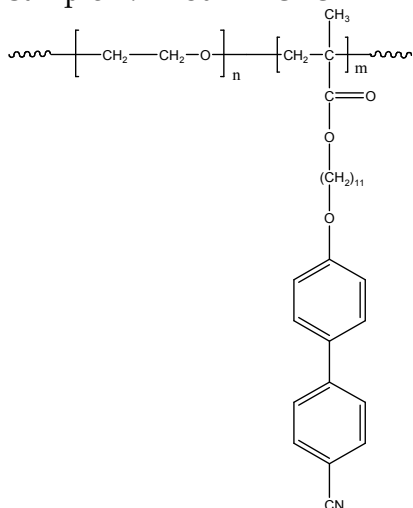


Sample Name:

Poly(ethylene oxide-b-11-(4'-cyanobiphenyl-4-yloxy) undecyl methacrylate

Sample #: **P15011-EO4CNBP11CMA**



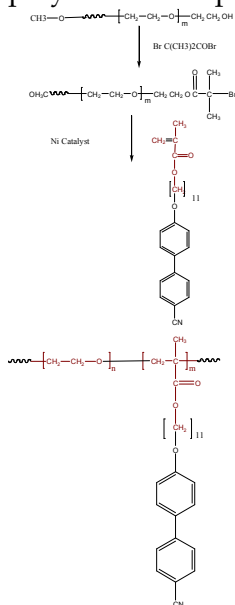
Structure:

Composition:

Mn x 10 ³ PEO-b-4CNBP11CMA	PDI
2.0-b-4.5	1.13
Microstructure of 4CNBP11CMA	Syndio:hetero:iso 53:32:15

Synthesis Procedure:

Polymer is synthesized by controlled radical polymerization process.

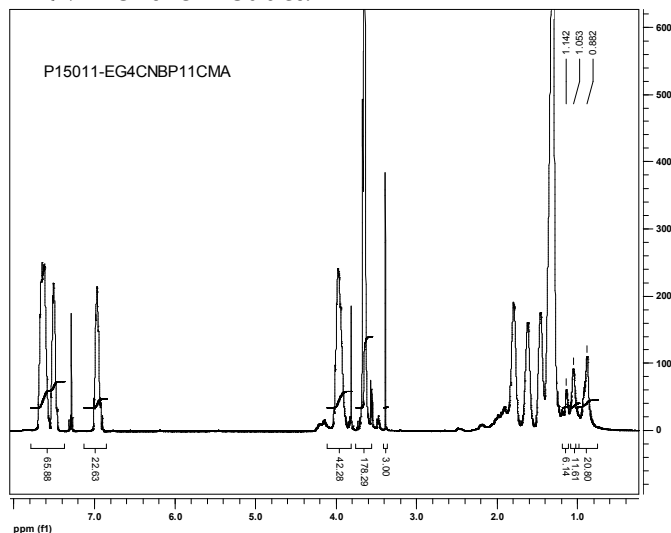
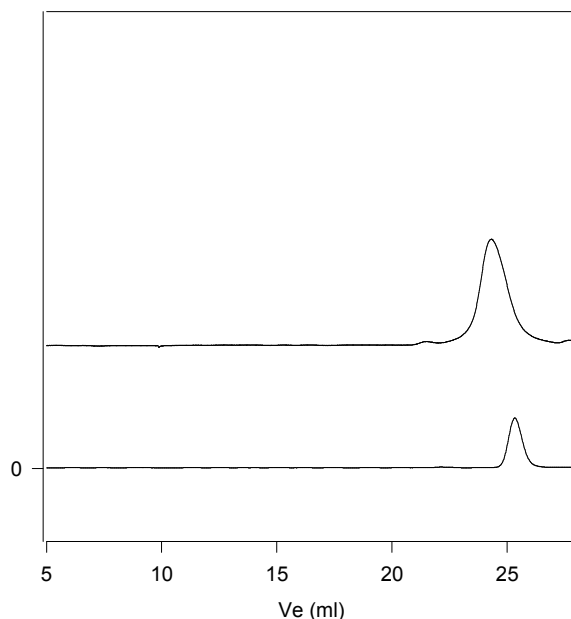
**Purification of the polymer:**

The un-reacted PEG can be removed by stirring the polymer in hot water/Methanol. The obtained

polymer dissolved in CHCl₃/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 CHCl₃, THF and toluene. The polymer precipitated out from hexane.

HNMR of the Product:**SEC of the block copolymer:****P15011-EO4CNBP11CMA**

Size exclusion chromatography of the product:

— Poly(ethylene oxide), M_n=2000, M_w=2210, PI=1.09

— Block Copolymer PEO(2000)-b-4-CNBP11CMA (4500), PI=1.13

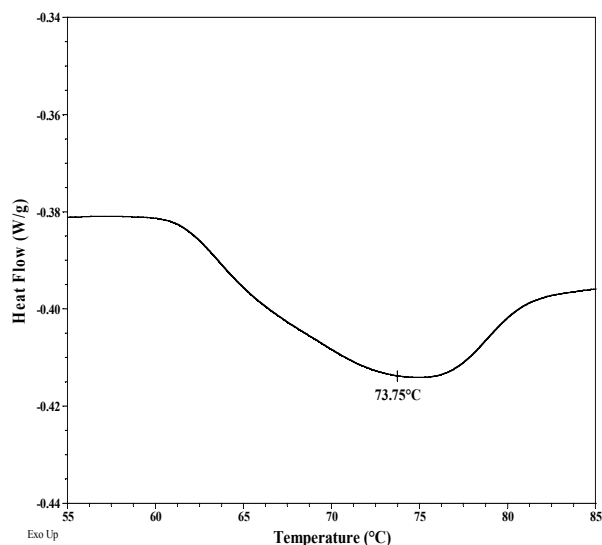
Thermal analysis of P15011-EO4CNBP11CMA

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).

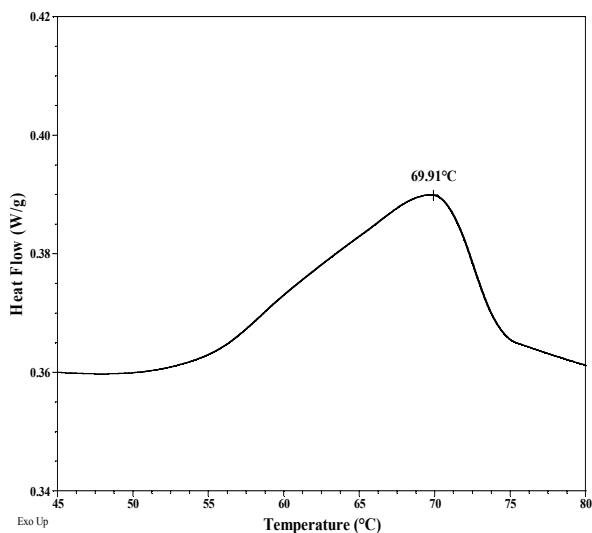
Melting and crystallization curve for the sample

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 EO4CNBP11CMA



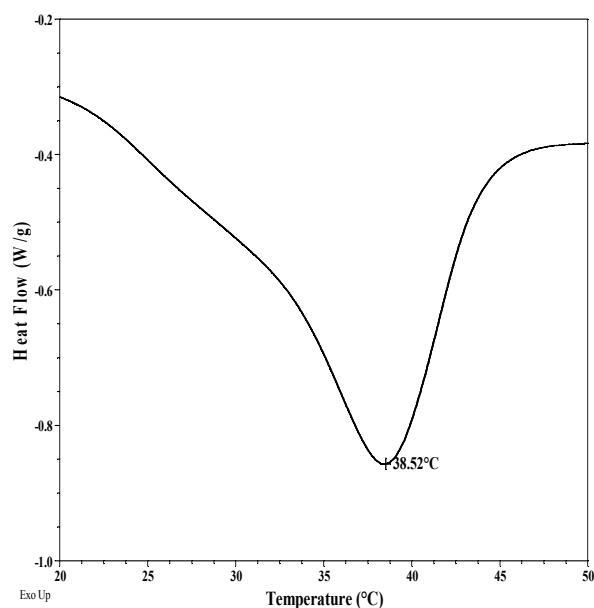
Crystallization curve for EO4CNBP11CMA



Thermal analysis results at a glance:

Sample	T_m (°C)	T_c (°C)	T_g (°C)
EO	39	-15	-
4CNBP11CMA	74	70	-

Melting curve for PEO block:



Crystallization curve for PEO block:

