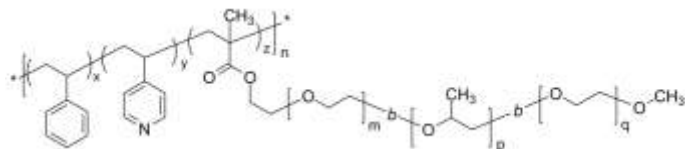


**Sample Name:** Random copolymer of Poly (styrene-co-4-vinyl pyridine-co-[poly (ethylene oxide-b-propylene oxide-b-ethylene oxide)] methacrylate)

**Sample #:** P14438-S4VPEOPOEOran

**Structure:**



**Composition:**

$M_n \times 10^3$	PDI
108.0	1.3

S: 4VP: ratio	15:85
4VP:EOPOEO ratio	31:69
S:4VP:EOPOEO ratio After normalization	9.0:50:41
Macromonomer Lot # P10873 EOPOEO-MA 0.30-b-1.7-b-0.600 Dp; 7-b-29-b-14	

**Characterization:**

The polymer analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from  $^1\text{H-NMR}$  spectroscopy.

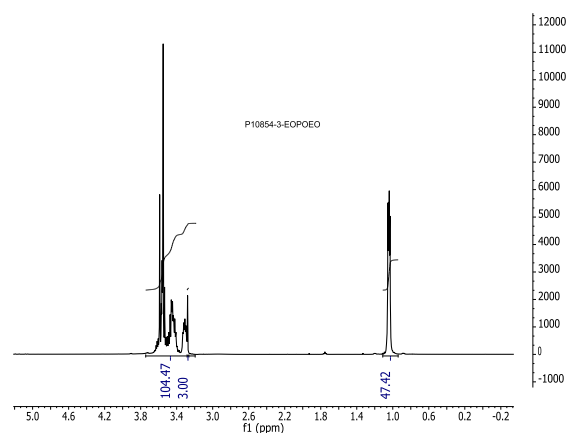
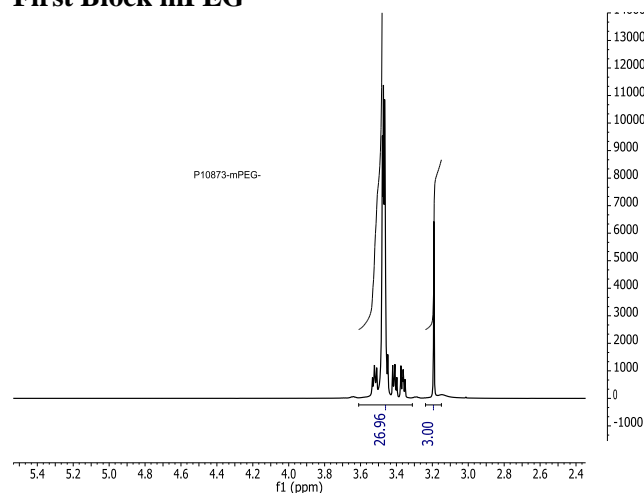
**Solubility:**

The polymer is soluble in acetone, DMF, methanol. It precipitates from, ether and hexane.

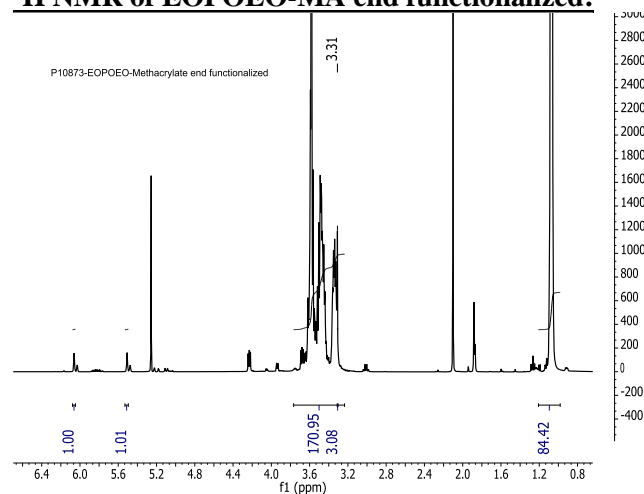
**Thermal analysis**

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of  $20^\circ\text{C}/\text{min}$ . The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature ( $T_g$ ).

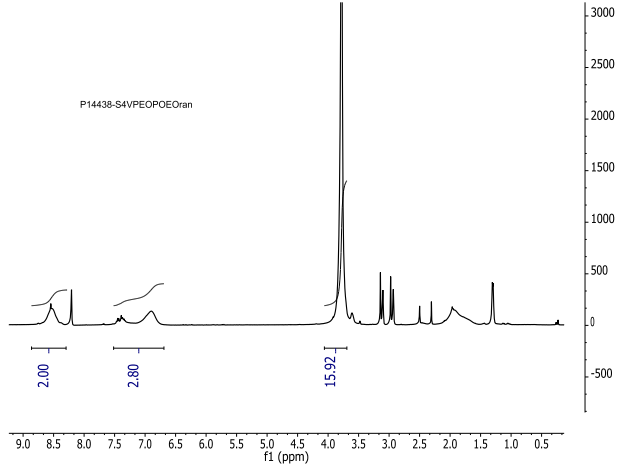
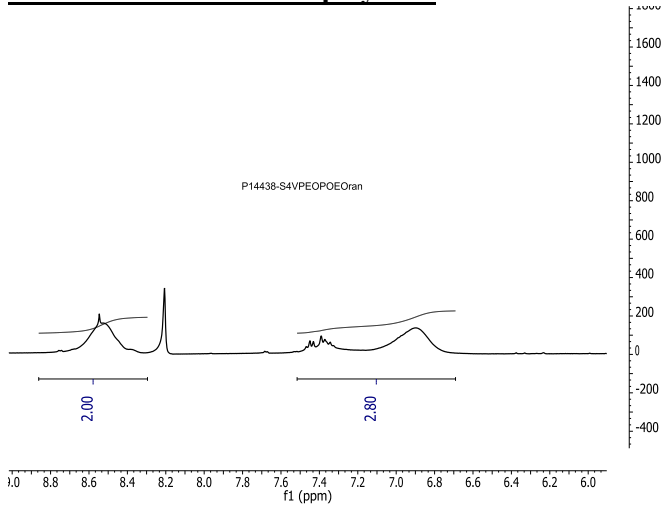
**$^1\text{H-NMR}$  of EOPOEO Macromonomer: EOPOEO First Block mPEG**



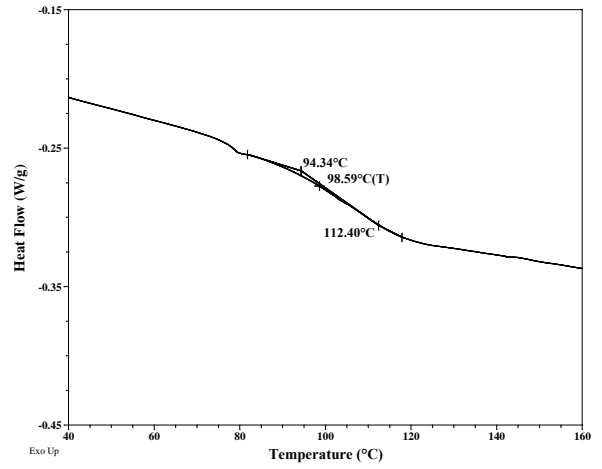
**$^1\text{H-NMR}$  of EOPOEO-MA end functionalized:**



**HNMR of the random copolymer:**

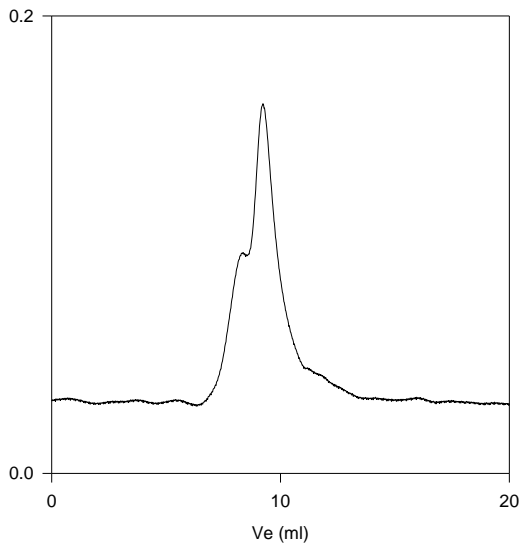


**DSC thermogram for the polymer:**



**SEC of the copolymer:**

**P14438-S4VPEOPEO ran**  
**Run in DMF at 60 °C**



$M_n=108,000$ ,  $M_w=140,000$ ,  $PI=1.3$