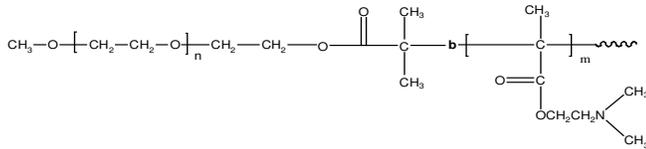


**Sample Name:** Poly (ethylene oxide-b-2-(dimethylamino) ethyl methacrylate)

**Sample #:** P19597C- EODMAEMA

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> PEO-b-PDMAEMA	PDI
2.0-b-3.0	1.28

**Synthesis Procedure:**

Poly [ethylene oxide-b-2-(dimethylamino) ethyl methacrylate] is prepared by living anionic polymerization of ethylene oxide followed by control radical process for 2-(dimethyl amino) ethyl methacrylate polymerization.

**Characterization:**

The polymer was characterized by SEC and <sup>1</sup>H NMR.

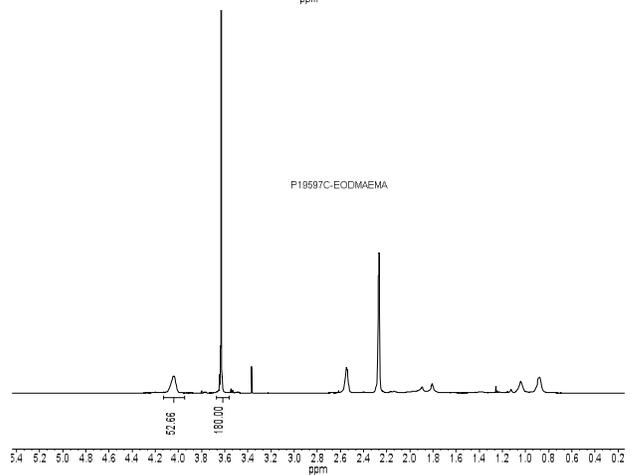
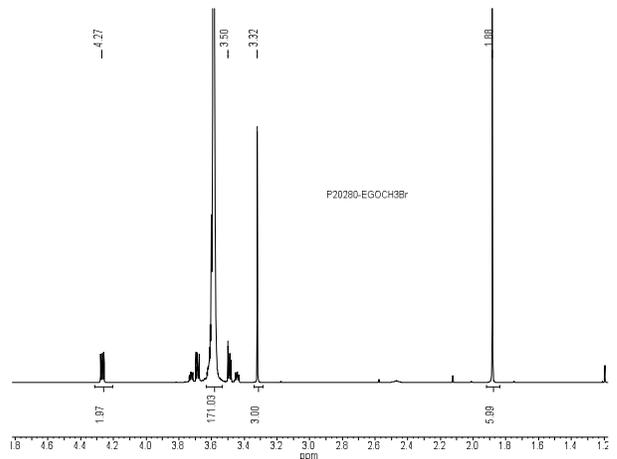
**Purification of the polymer and removal of any unreacted homopolyethylene oxide from the diblock copolymer:**

Polymer dissolved in water and the pH of the medium increased to about 13 by addition of NaOH. The polymer precipitated out by warming the solution at 80°C. The process was repeated twice to remove homo PEO completely. The obtained polymer dissolved in methanol and pH was adjusted to about 8 by adding HCL and filtered. The solvent was removed by rota-evaporator. The highly viscous solution was cold precipitated by hexane/ether mixture and finally dried under vacuum at 40°C.

**Solubility:**

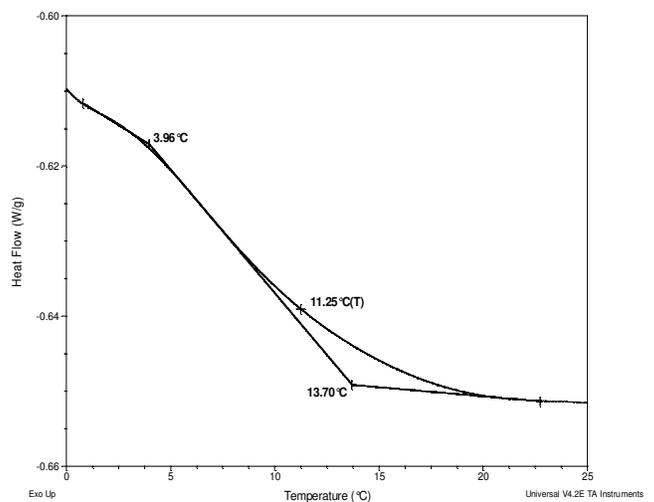
The polymer is soluble in water.

**<sup>1</sup>H-NMR spectrum of the macroinitiator :**

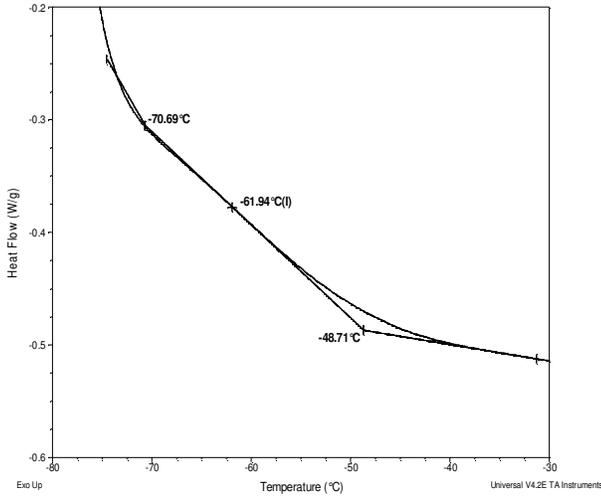


**Thermograms for the sample**

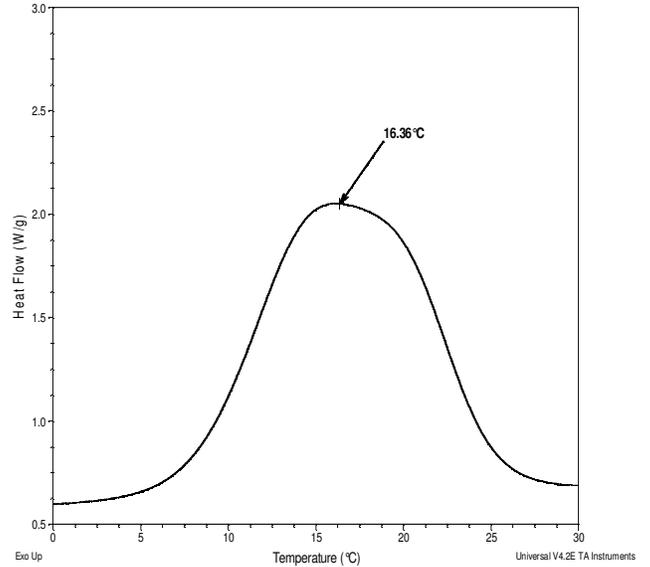
**For DMAEMA block**



**For PEO block**



**Crystallization curve for PEO block**



**Thermal analysis results at a glance**

For DMAEMA block		
$T_g$ : 11°C	$T_m$ : -	$T_c$ : -
For PEO block		
$T_g$ : -62°C	$T_m$ : 52°C	$T_c$ : 16°C

**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. The  $T_c$  was calculated during **cooling ramp**.

**Melting curve for PEO block**

