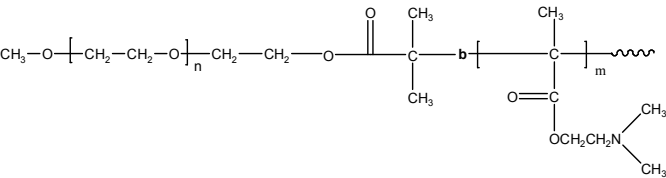


Sample Name:
Poly(ethylene oxide -b- 2-(dimethylamino)ethyl methacrylate)

Sample #: P14908- EODMAEMA

Structure:



Composition:

Mn x 10 ³ PEO-b-PDMAEMA	PDI
5.0-b-8.0	1.22

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:

By SEC and HNMR

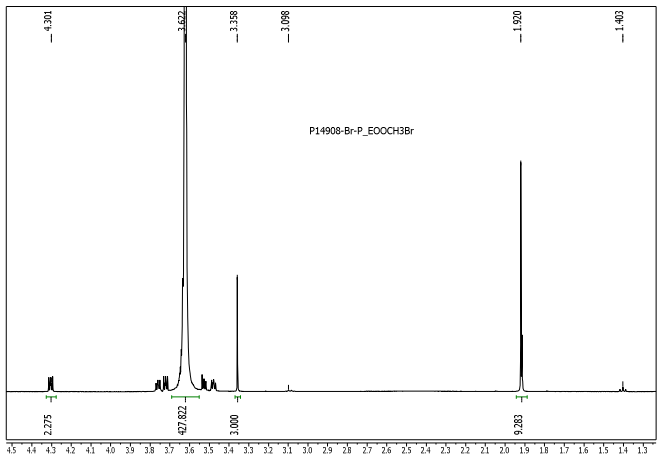
Purification of the polymer and removal of any un-reacted homopolyethylene oxide from the diblock copolymer:

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.

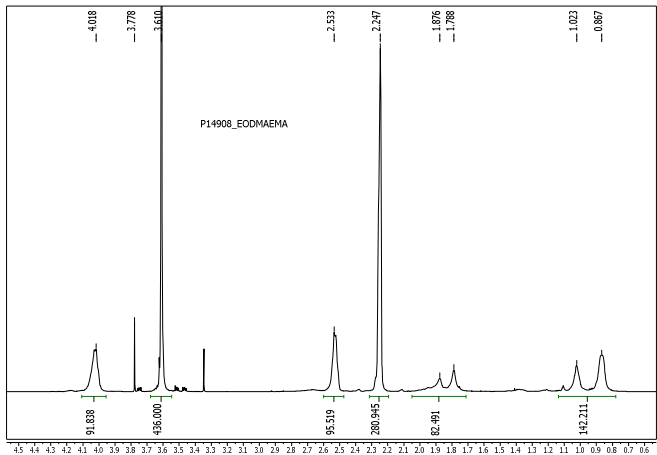
Solubility:

The polymer is soluble in water.

HNMR mPEG-Br

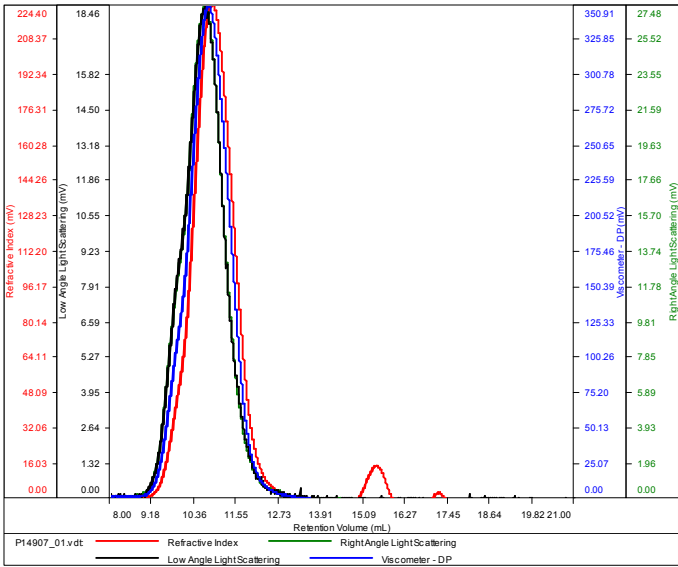


¹H-NMR Spectrum of the block copolymer:



SAMPLE ID: P14907-EODMAEMA

Conc (mg/mL)	7.9823
dn/dc (mL/g)	0.1050
Method	ps80k-July292015-0000.vcm
Solvent	DMF w 0.03M LiBr
Column	PSS



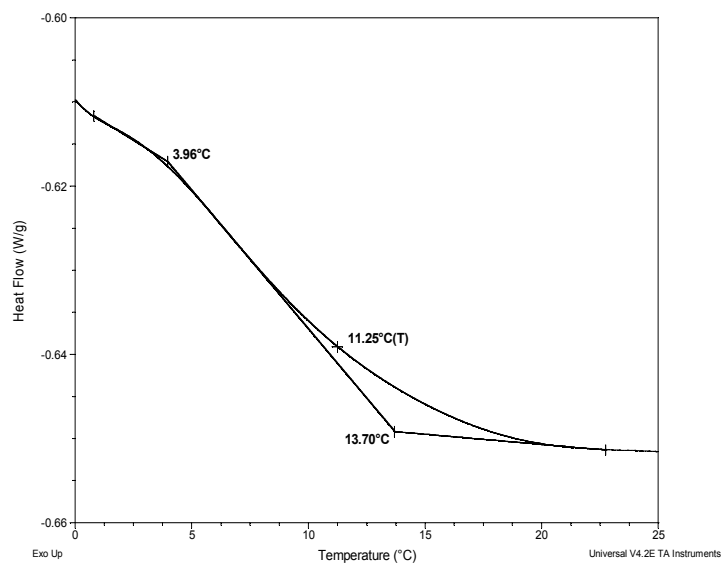
Sample	Mn	Mw	Mp	Mw/Mn	IV
P14907_01.vdt	28,423	34,794	30,441	1.224	0.4588

Thermal analysis of # P14908-EODMAEMA

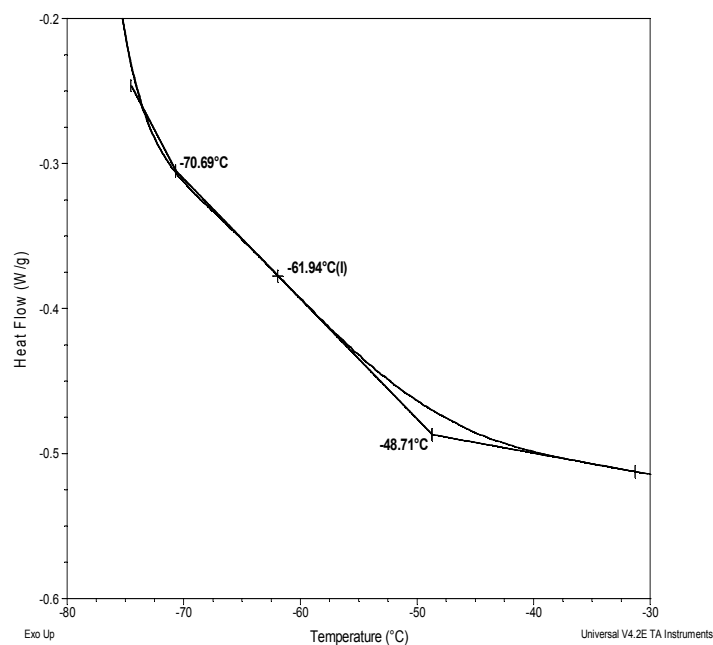
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 15°C/min. The midpoint of the slope change of the heat flow plot of the second **heating scan** was considered as the glass transition temperature (T_g).

Thermograms for the sample

For DMAEMA block



For PEO block



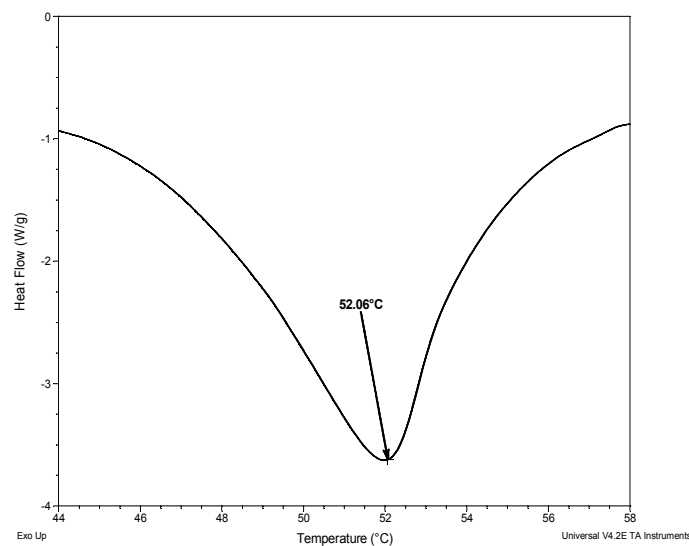
Thermal analysis results at a glance

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



Crystallization curve for PEO block

