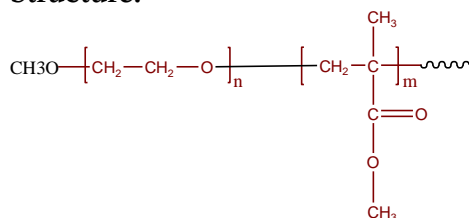


Sample Name:

Poly(ethylene oxide-b-methyl methacrylate)

Sample #: **P7370-EOMMA**

Structure:

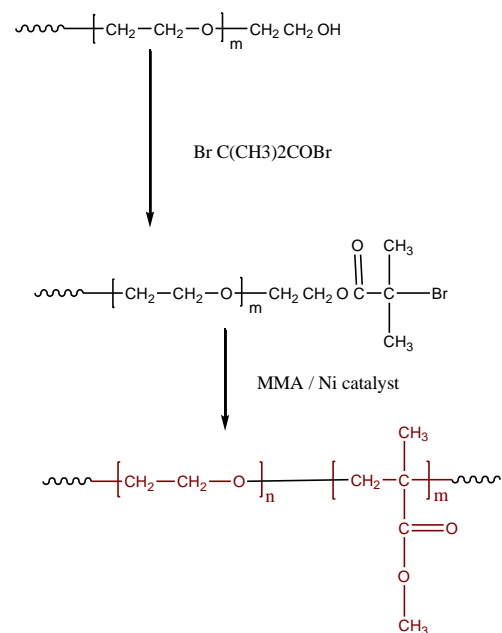


Composition:

$M_n \times 10^3$ PEO-b-MMA	PDI
14.4-b-8.3	1.4

Synthesis Procedure:

Poly(Ethylene oxide-methyl methacrylate) is prepared as the scheme below:



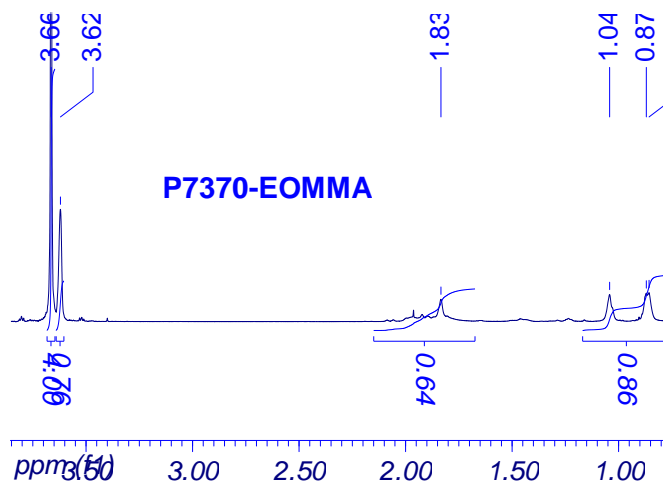
Characterization:

Polymer composition was determined by ^1H NMR taking the integration of PEG block at 3.66 ppm and methyl ester of PMMA block at 3.62 ppm. Molecular weights of the first block and the M_w/M_n of the final and the first block was determined by SEC in THF.

Solubility:

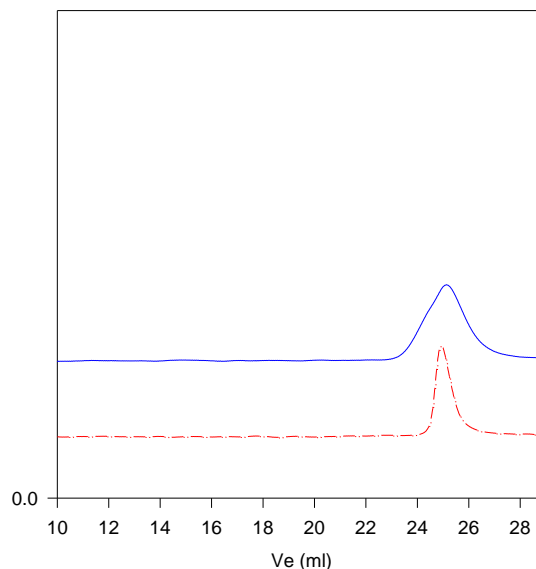
Poly(ethylene oxide -b- MMA) is soluble in CHCl_3 , THF, toluene. The polymer precipitated out from hexane.

^1H -NMR Spectrum of the block copolymer:



SEC of the block copolymer:

P7370-EOMMA



Size exclusion chromatography of poly(ethylene oxide-b-methyl methacrylate)

--- PEO, $M_n=14400$, $M_w=15700$, $M_w/M_n=1.09$

— Poly(ethylene oxide-b-methyl methacrylate)

M_n : PEO(14400)-b-MMA(8300) $M_w/M_n=1.4$

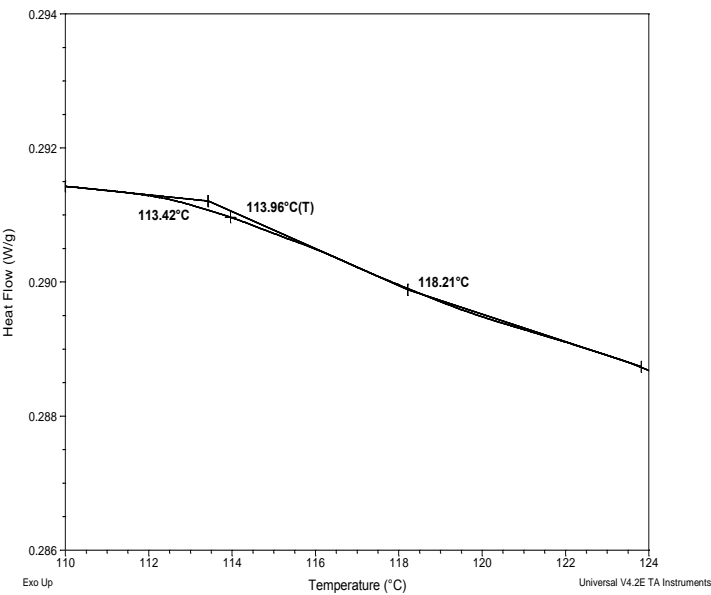
Thermal analysis of the sample# P7370-EOMMA

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 20°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).

Thermal analysis results at a glance

For PMMA block		
T_g : 114°C	T_m : -	T_c : -
For PEO block		
T_g : -60°C	T_m : 57°C	T_c : 15°C

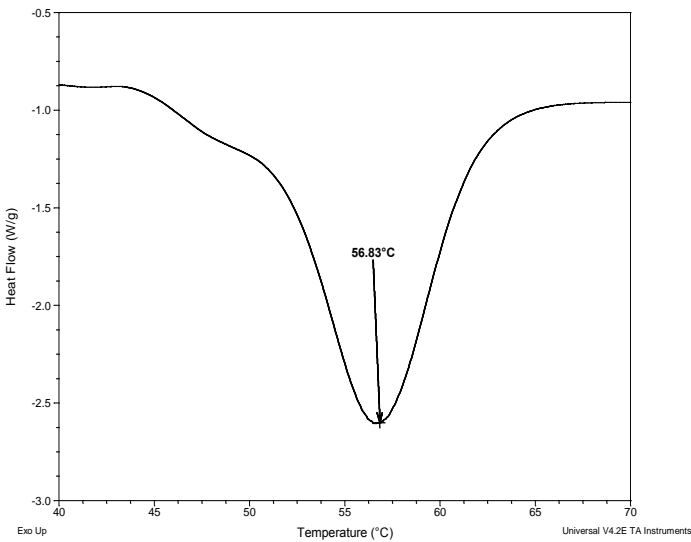
Thermogram for the MMA block



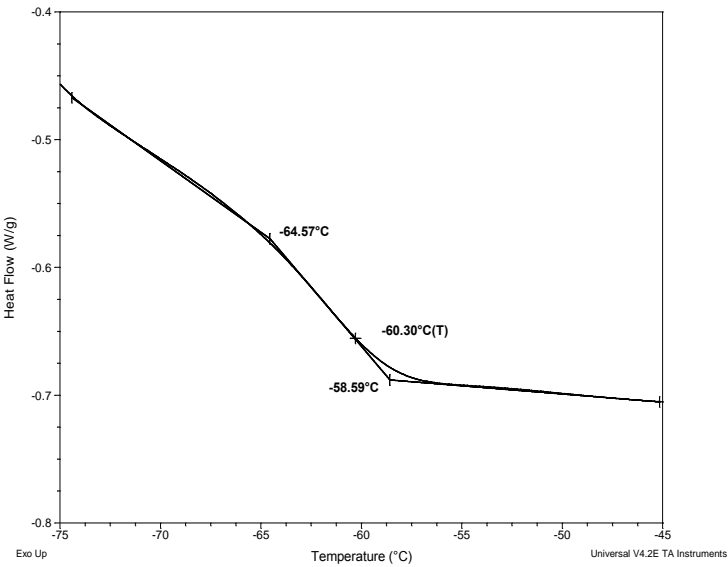
Melting and crystallization curve for the sample

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 PEO block



Thermogram for PEO block



Crystallization curve for PEO block

