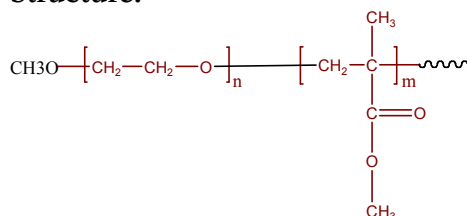


Sample Name:

Poly(ethylene oxide-b-methyl methacrylate)

Sample #: **P3040-EOMMA**

Structure:

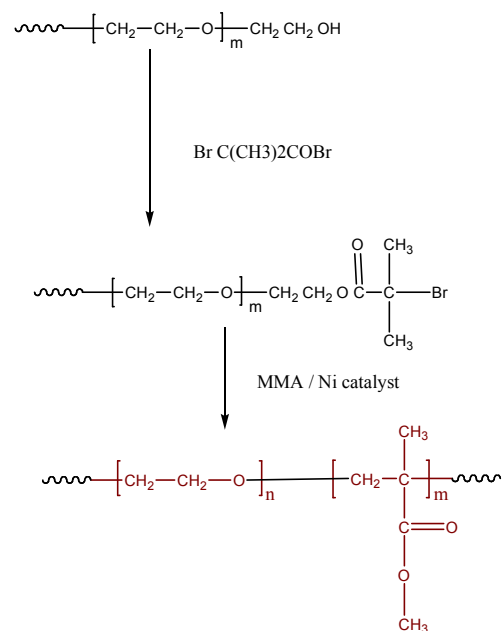


Composition:

Mn x 10 ³ PEO-b-MMA	PDI
3.5-b-6.5	1.18

Synthesis Procedure:

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



Characterization:

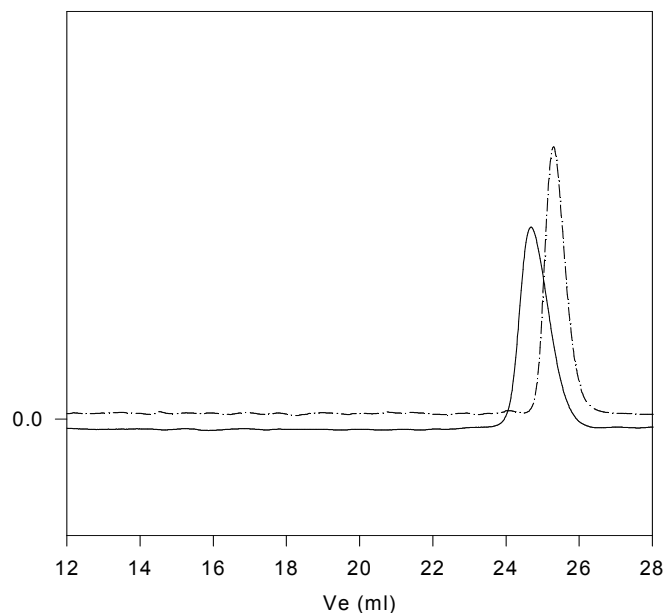
Polymer composition was determined by ¹H NMR taking the integration of PEG block at 3.66 ppm and methyl ester of PMMA block at 3.62 ppm. Molecular weights of the first block and the Mw/Mn of the final and the first block was determined by SEC in THF.

Solubility:

Poly(ethylene oxide -b- MMA) is soluble in CHCl₃, THF, toluene. The polymer precipitated out from hexane.

SEC of the block copolymer:

P3040-EOMMA



Size exclusion chromatography of poly(EO-b-MMA)

--- PEO, M_n=3500, M_w=3700, Mw/Mn=1.06

— Block copolymer Poly(ethylene glycol-b-Methylmethacrylate)
Mn: PEO(3500)-b-MMA(6500) Mw/Mn=1.18

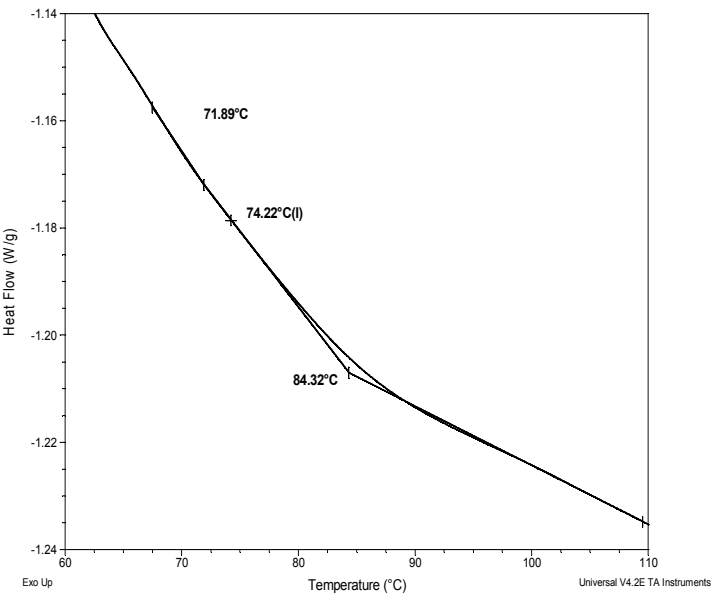
Thermal analysis of the sample# P3040-EOMMA

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 : 74°C	T_m : -	T_c : -
For PEO block		
T_g : -66°C	T_m : 57°C	T_c : 15°C

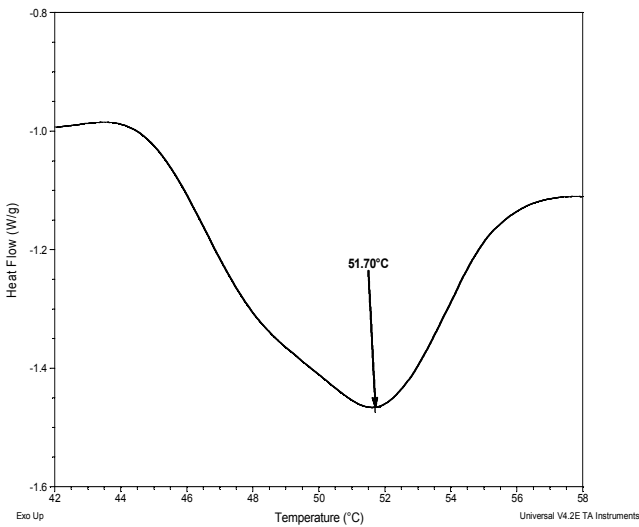
Thermogram for the MMA block



Melting curve for the sample

The melting temperature (T_m) was taken as the maximum of the endothermic peak.

Melting curve for PEO block



Thermogram for PEO block

