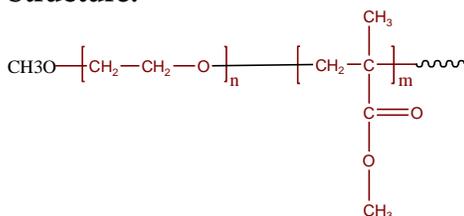


Sample Name:

Poly(ethylene oxide-b-methyl methacrylate)

Sample #: P3037-EOMMA

Structure:

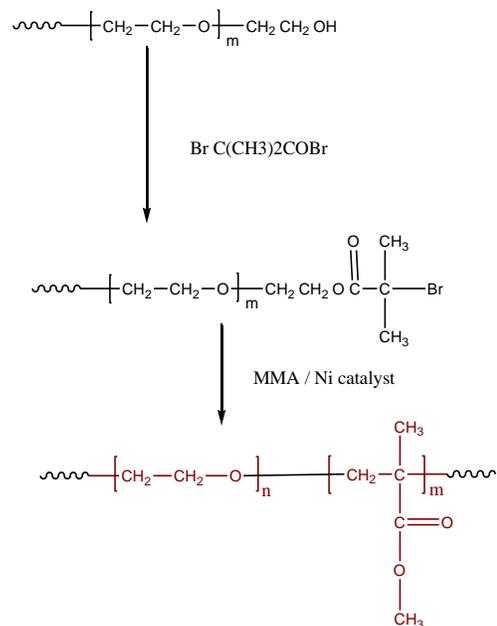


Composition:

Mn x 10 <sup>3</sup> PEO-b-MMA	PDI
3.0-b-3.5	1.15

Synthesis Procedure:

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



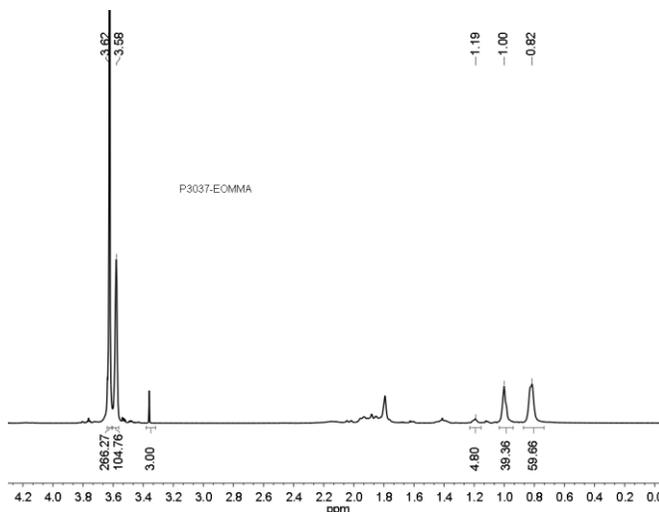
Characterization:

Polymer composition was determined by H 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:

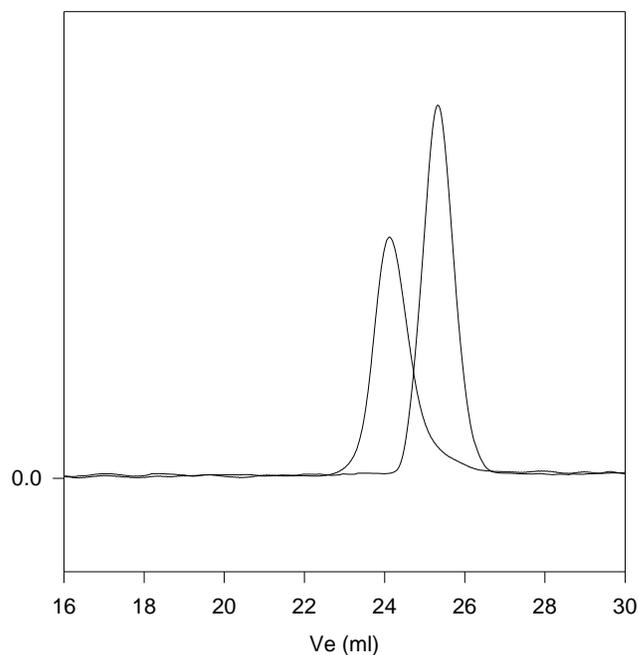
Poly(ethylene oxide -b- MMA) is soluble in CHCl<sub>3</sub>, THF, toluene. The polymer precipitated out from hexane.

<sup>1</sup>H-NMR Spectrum of the block copolymer:



SEC of the block copolymer:

**P3037-EOMMA**



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

— PEO, M<sub>n</sub>=3000, M<sub>w</sub>=3200, Mw/Mn=1.06

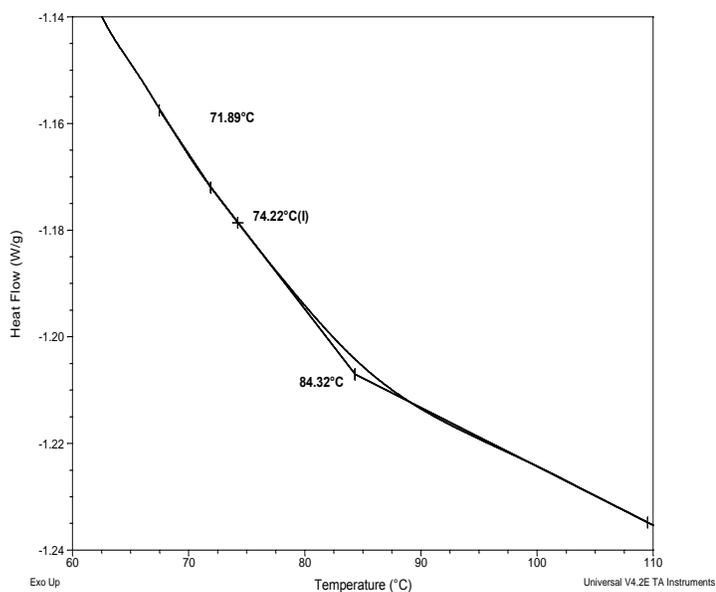
— Poly(ethylene oxide-b-methyl methacrylate)

Mn: PEO(3000)-b-MMA(3500) Mw/Mn=1.15

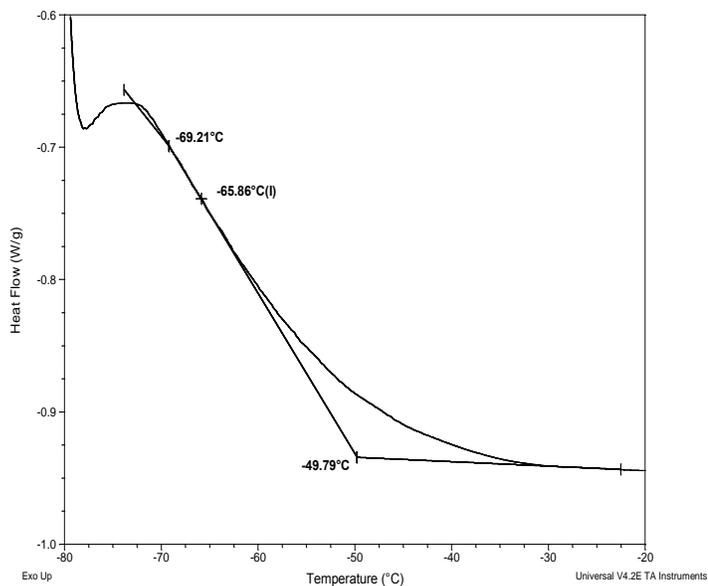
## Thermal analysis of the sample# P3037-EOMMA

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 ( $T_g$ ).

### Thermogram for the MMA block



### Thermogram for PEO block



## 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

### Melting curve for the sample

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

### Melting curve for PEO block

