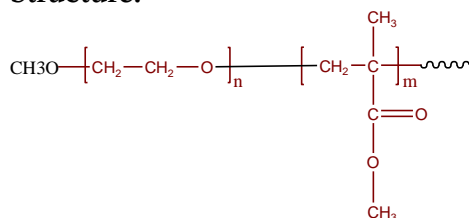


Sample Name:

**Poly(ethylene oxide-b-methyl methacrylate)**

Sample #: **P18730B-EOMMA**

**Structure:**

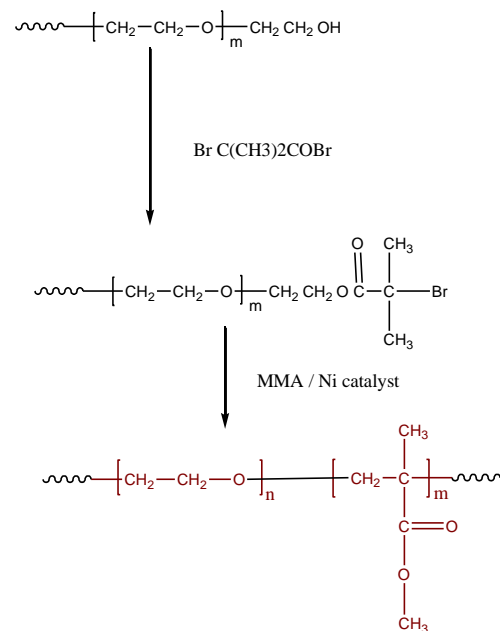


**Composition:**

Mn x 10 <sup>3</sup> PEO-b-MMA	PDI
2.4-b-3.0	1.10

**Synthesis Procedure:**

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



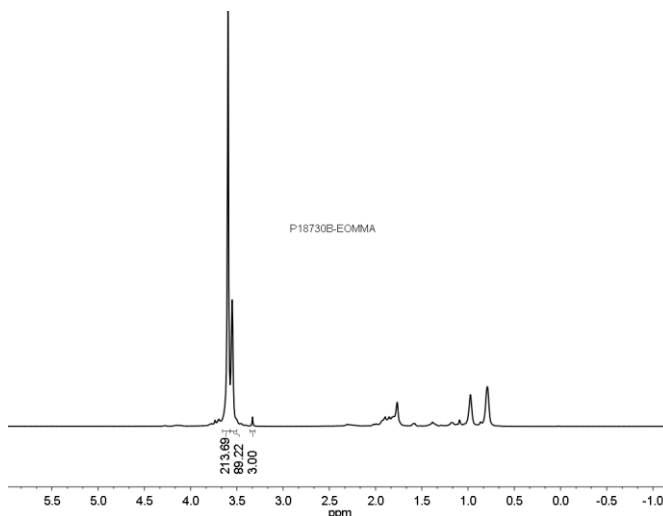
**Characterization:**

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:**

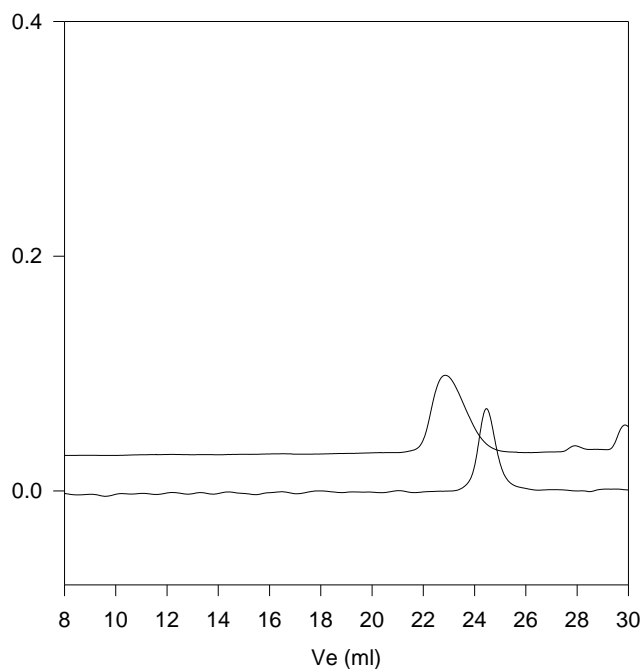
Poly(ethylene oxide -b- MMA) is soluble in CHCl<sub>3</sub>, THF, toluene. The polymer precipitated out from hexane.

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



**SEC of the block copolymer:**

**P18730B-EOMMA**



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

— PEO, M<sub>n</sub>=2400, M<sub>w</sub>=2600, M<sub>w</sub>/M<sub>n</sub>=1.08

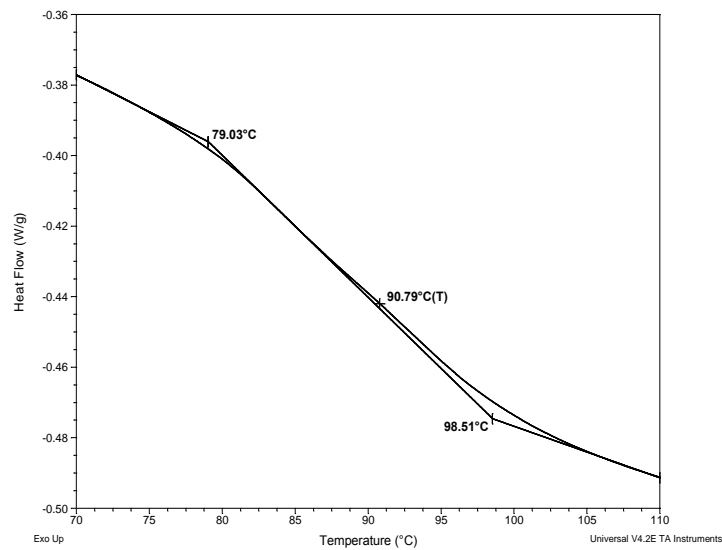
— Poly(ethylene oxide-b-methyl methacrylate)

Mn: PEO(2,400)-b-MMA(3,000) M<sub>w</sub>/M<sub>n</sub>=1.10

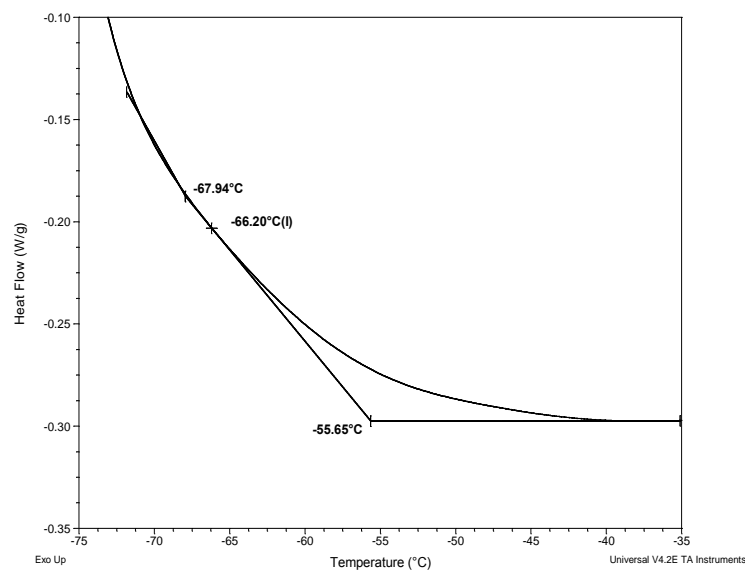
Thermal analysis of the sample# P18730B-EOMMA

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		
$T_g$ : 91°C	$T_m$ : -	$T_c$ : -
For PEO block		
$T_g$ : -66°C	$T_m$ : 50°C	$T_c$ : Not found

Melting curve for the sample

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

Melting curve for PEO block

