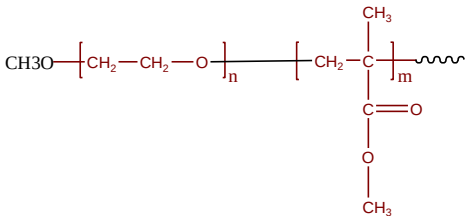
Sample Name:
**Poly(ethylene oxide-b-methyl methacrylate)**

Sample #: **P3043-EOMMA**

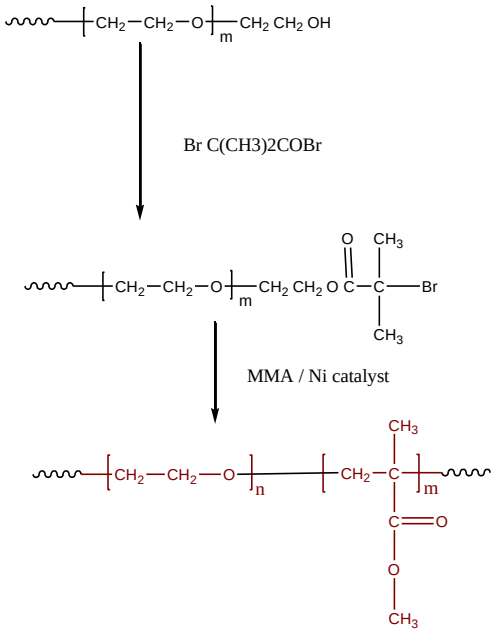
**Structure:**



**Composition:**

| Mn x $10^3$ PEO-b-MMA | PDI |
|---|---|
| 3.5-b-40.0 | 1.4 |

**Synthesis Procedure:**
Poly(Ethylene oxide-methyl methacryale) is prepared as the scheme below:



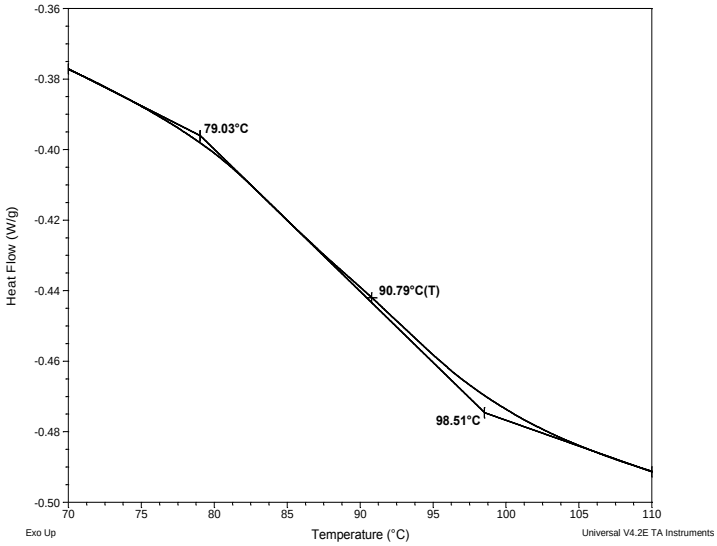

**Characterization:**
Polymer composition was determined by H NMR taking the integration of PEG block at 3.66 ppm and methyl ester of PMMA block at 3.62 ppm. Molecular weights of the first block and the Mw/Mn of the final and the first block was determined by SEC in THF.

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

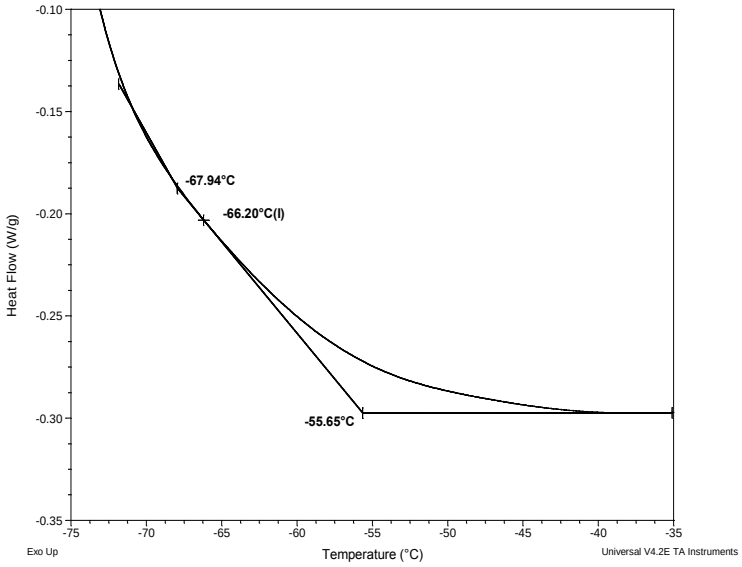
**Thermal analysis of the sample# P3043-EOMMA**

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 20$^{o}$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$^{o}$C | $T_m$: - | $T_c$: - |
| **For PEO block** | | |
| $T_g$: -66$^{o}$C | $T_m$: 50$^{o}$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**