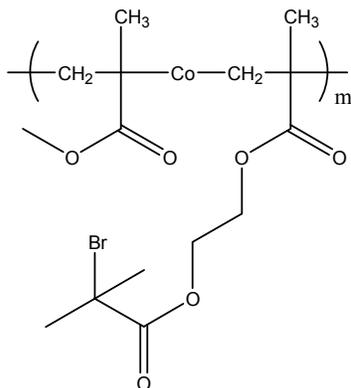


**Sample Name:**

Poly( methylmethacrylate-co- bromoisobutryl ethylmethacrylate)

**Sample #: P13085-MMABrIBEtMAn****Structure:****Composition:**

$M_n \times 10^3$ MMA-Co-BrIBEMA	PDI
8.0	1.4
Mol % MMA: 87%	Synd:60%; Hetero:36%; Iso:4%
$T_g$ for the polymer	90°C

**Synthesis Procedure:**

Poly(Methylmethacrylate-Co-2-bromoisobutryl ethylmethacrylate) random copolymer was synthesized by reversible addition-fragmentation chain-transfer (RAFT).

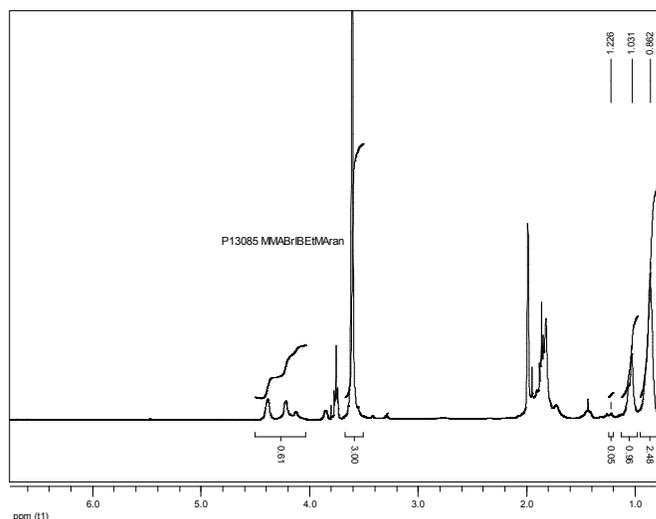
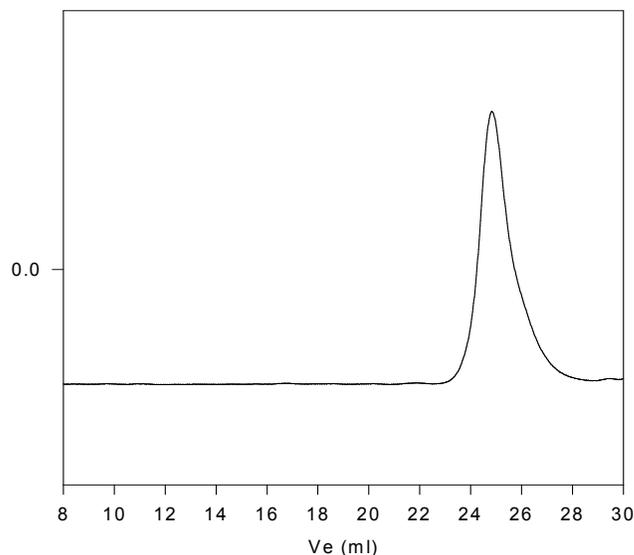
SEC analysis of the obtained block copolymer in THF was carried out in THF and triethyl amine as eluent. The final random copolymer composition was confirmed by  $^1\text{H-NMR}$  spectroscopy in  $\text{CdCl}_2$  by comparing the peak area of the methyl ester protons at 3.6 ppm against ethyl methacrylate at 4.2-4.17 ppm. Block copolymer PDI was determined by SEC.

**Thermal analysis:**

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°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 ( $T_g$ ).

**Solubility:**

Polymer is soluble in THF and  $\text{CHCl}_3$ .

 **$^1\text{H-NMR}$  Spectrum of the block copolymer :****SEC of the block copolymer:****P13085-MMABrIBEMAn**

Size exclusion chromatography:

— Random Copolymer  $M_n$ : 8000  $M_w$ : 11000  $M_w/M_n$  1.4  
Mol % of MMA: 87%  
composition from H NMR: s: 60%, h: 36%, i:4%

**DSC thermogram for the polymer:**