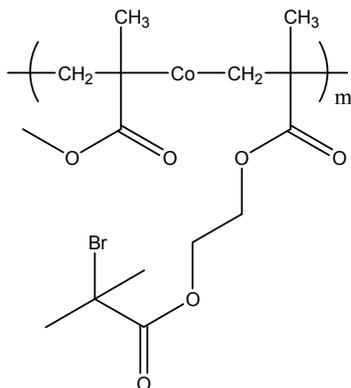


### Sample Name:

Poly( methylmethacrylate-co-  
(isobutryl)ethylmethacrylate

Sample #: P13068-3-MMABrIBEtMAn

### Structure:



### Composition:

|                                     |                                |
|-------------------------------------|--------------------------------|
| $M_n \times 10^3$<br>MMA-Co-BrIBEMA | PDI                            |
| 24.5                                | 2.51                           |
| Mol % BrIBEMA: 14%                  | Synd:57% Hetero:27%<br>Iso:16% |
| $T_g$ for the polymer               | 86 °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.

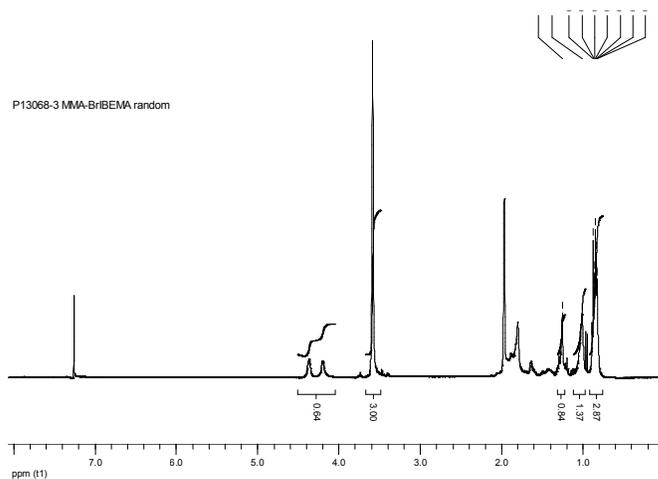
### Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of  $10^\circ\text{C}/\text{min}$ . 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:

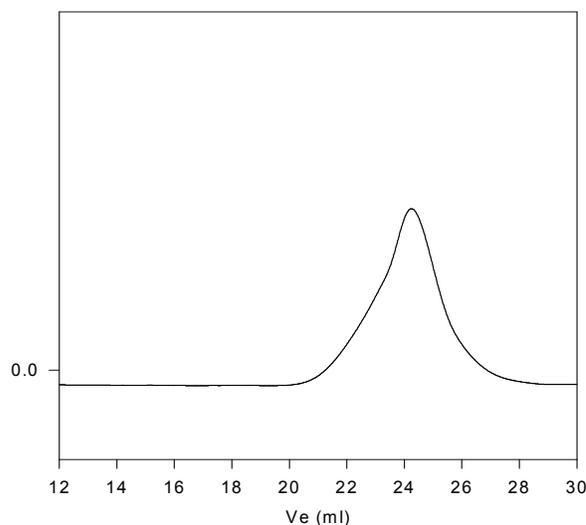
Polymer is soluble in THF and  $\text{CHCl}_3$ .

### $^1\text{H-NMR}$ Spectrum of the block copolymer :



### SEC of the block copolymer:

#### P13068-3-MMA-Co-BrIBEMA



Size exclusion chromatography:

— Random Copolymer PMMA-Co-BrIBEMA,  $M_n$ : 24.5,  $PI=2.51$   
Mol % of Br: 14%  
composition from H NMR: s: 57%, h: 27%, i: 16%

### DSC thermogram for the polymer:

