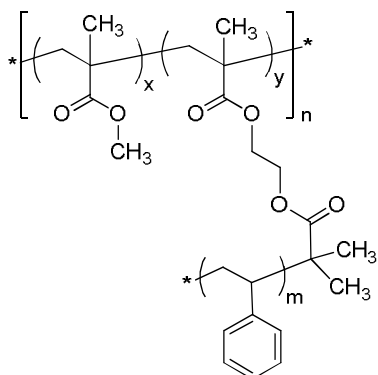


Sample Name: Poly(methyl methacrylate-*co*-[isobutyrylethyl methacrylate-*graft*-polystyrene])

Sample #: P13070-MMAIBEMAran-g-S

Structure:



Composition:

MMA- <i>co</i> -BrIBEMA (starting random copolymer, lot # P13068-8)		
$M_n \times 10^3$ (g/mol)	BrIBEMA content	M_w/M_n
34.7	77 mol%	broad

MMA- <i>co</i> -(IBEMA- <i>g</i> -S)	
$M_n \times 10^3$ (g/mol)	M_w/M_n
8.0- <i>co</i> -18.6- <i>g</i> -18.4	4.0
T_g of MMA- <i>co</i> -(IBEMA- <i>g</i> -S):	85°C

Synthesis procedure:

Poly(methyl methacrylate-*co*-2-bromoisobutyryl ethyl methacrylate) random copolymer was synthesized by living anionic polymerization, followed by grafting polystyrene on IBEMA units by controlled radical polymerization.

Characterization:

The molecular weight and polydispersity index of the polymer were determined by size exclusion chromatography (SEC) using THF (containing triethyl amine) as an eluent.

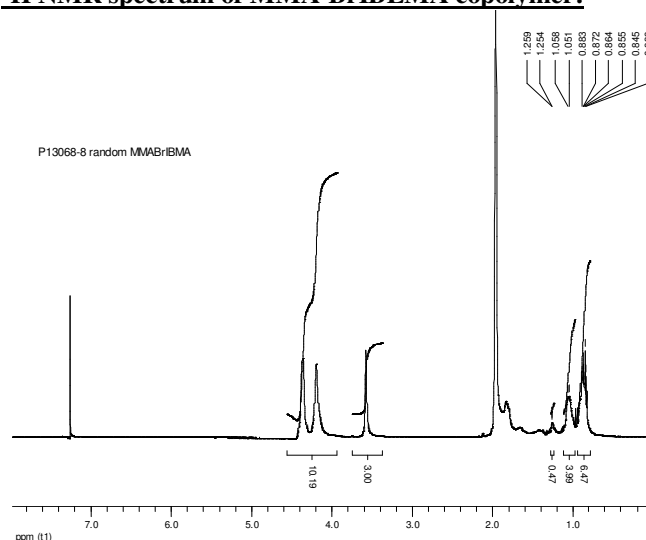
Thermal analysis:

Thermal analysis was performed on TA Instruments Q100 differential scanning calorimeter (DSC) under a nitrogen atmosphere. The glass transition temperature (T_g) of the polymer was measured at a scan rate of 10°C/min shortly after creating thermal history of the sample.

Solubility:

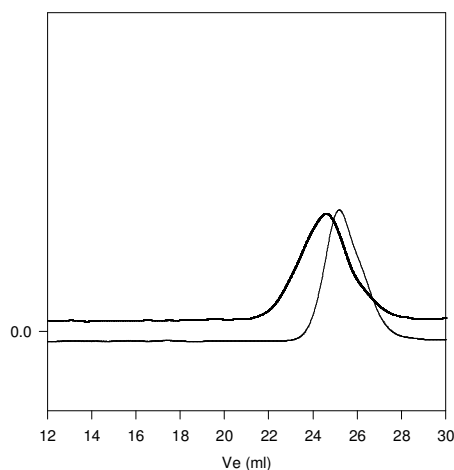
The polymer is soluble in THF, chloroform.

^1H NMR spectrum of MMA-BrIBEMA copolymer:



SEC elugram of MMA-BrIBEMA (random copolymer) and MMAIBEMAran-g-S (graft copolymer) in THF:

P13070_MMAIBEMAran-g-S



Size exclusion chromatography:

— Random Copolymer (PMMA-*co*-(BrIBEMA-*g*-S)),
Mn of MMA-BrIBEMA(77mol%): 34,700; PDI=5.3
Total Mn (after PS grafting): 45,000; PDI=4.0

DSC thermogram of the polymer:

