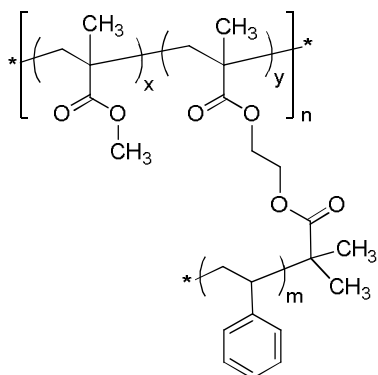


**Sample Name:** Poly(methyl methacrylate-*co*-[isobutrylethyl methacrylate-*graft*-polystyrene])

**Sample #:** P13073-MMAIBEMAran-g-S

**Structure:**



**Composition:**

MMA- <i>co</i> -BrIBEMA (starting random copolymer, lot # P5868)		
$M_n \times 10^3$ (g/mol)	BrIBEMA content	$M_w/M_n$
6.5	40 mol%	1.4

MMA- <i>co</i> -(IBEMA- <i>g</i> -S)	
$M_n \times 10^3$ (g/mol)	$M_w/M_n$
3.9- <i>co</i> -1.8- <i>g</i> -10.3	2.0

$T_g$ of MMA- <i>co</i> -(IBEMA- <i>g</i> -S):	84°C
--	------

**Synthesis procedure:**

Poly(methyl methacrylate-*co*-2-bromoisobutryl 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.

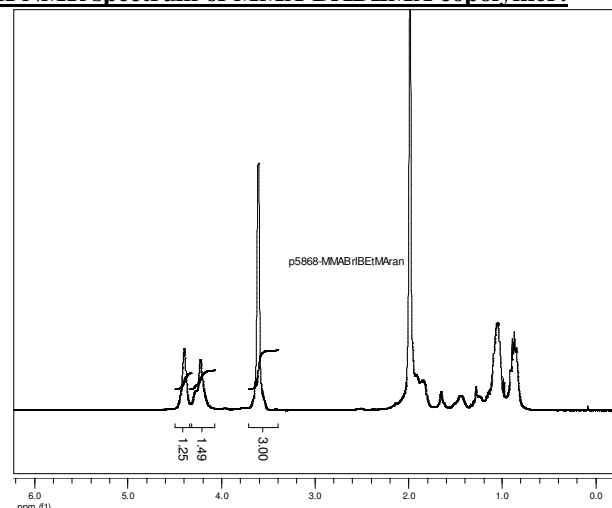
**Thermal analysis:**

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:**

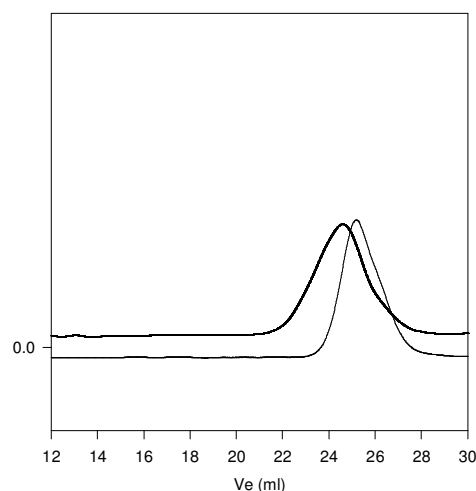
The polymer is soluble in THF, chloroform.

**<sup>1</sup>H NMR spectrum of MMA-BrIBEMA copolymer:**



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

P13073\_MMAIBEMAran-g-S



Size exclusion chromatography:

— Random Copolymer (PMMA-*co*-(IBEMA-*g*-S));  
Mn of MMA-BrIBEMA(40mol%): 6,500; PDI=1.4  
Total Mn (after PS grafting): 16,000; PDI=2.0

**DSC thermogram of the polymer:**

