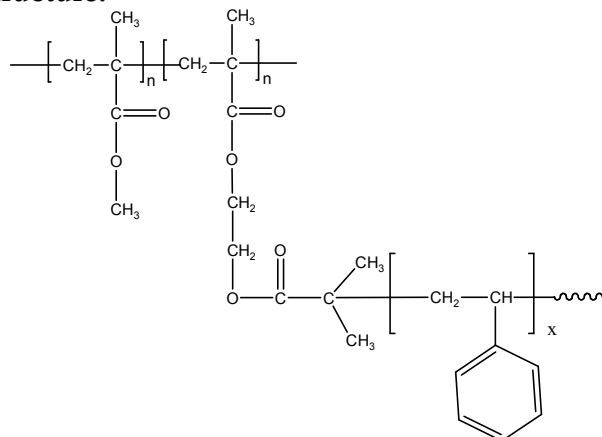


Sample Name:

Poly(methylmethacrylate-b-(isobutryl)ethylmethacrylate) grafted with polystyrene

Sample #: P13060-MMAIBEMA-G-S

Structure:**Composition:**

$M_n \times 10^3$ MMA-b-IEMA-G-S	PDI
5.5-b-2.5-g-10.0	2.13
Number of grafts ≈ 9	Molecular weight of Polystyrene branch ≈ 1100
T_g for the polymer	91 °C

Synthesis Procedure:

Poly(Methylmethacrylate-b-2-bromoisobutryl ethylmethacrylate) block copolymer is synthesized by living anionic polymerization with sequential addition of methyl methacrylate and 2-(bromoisobutryl) ethylmethacrylate. Proprietary procedure is under publication. Polystyrene graft was done by controlled radical process.

Characterization:

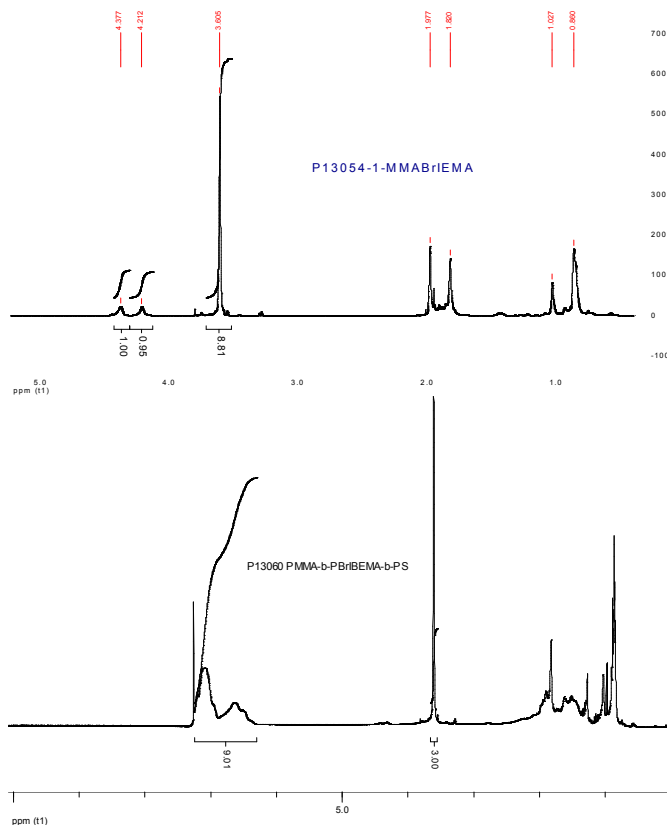
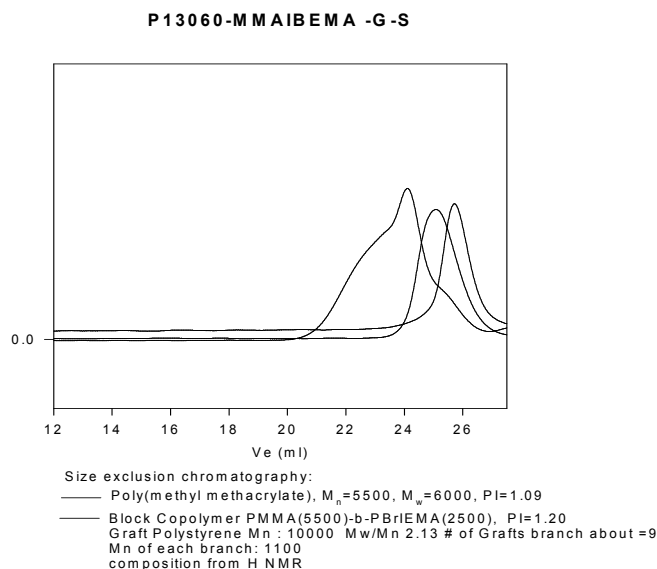
SEC analysis of the obtained block copolymer in THF was carried out in presence of triethyl amine as eluent. The final block copolymer composition was confirmed by $^1\text{H-NMR}$ spectroscopy in CdCl_3 by comparing the peak area of the methyl ester protons at 3.6 ppm against ethyl methacrylate at 4.2-4.17 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:

The polymer is soluble in THF and CHCl_3 .

 $^1\text{H-NMR}$ Spectrum of the block copolymer :**SEC of the block copolymer:****DSC thermogram for the polymer:**