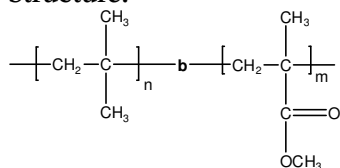


**Sample Name:** Poly(isobutylene-b-methyl methacrylate)

**Sample #:** P9239-IBMMA

**Structure:**



**Composition:**

Mn $\times 10^3$ Ib-b-MMA	Mw/Mn (PDI)
5.0-b-500.0	1.7

**Synthesis Procedure:**

Poly(isobutylene-b-methyl methacrylate) is prepared by cationic polymerization of isobutylene to obtain functionalized poly isobutylene. This end group converted to anionic species followed by living anionic polymerization of methyl methacrylate.

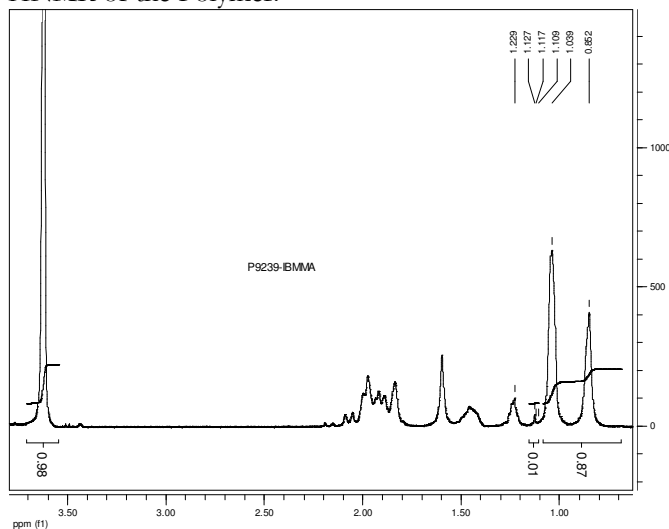
**Characterization:** An aliquot of the poly(isobutylene) block was terminated before addition of methyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from  $^1\text{H-NMR}$  spectroscopy by comparing the peak area of the isobutylene protons at 1.1 ppm with the peak area of methyl methacrylate protons at 3.6 ppm. Block copolymer PDI is 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 ( $T_g$ ).

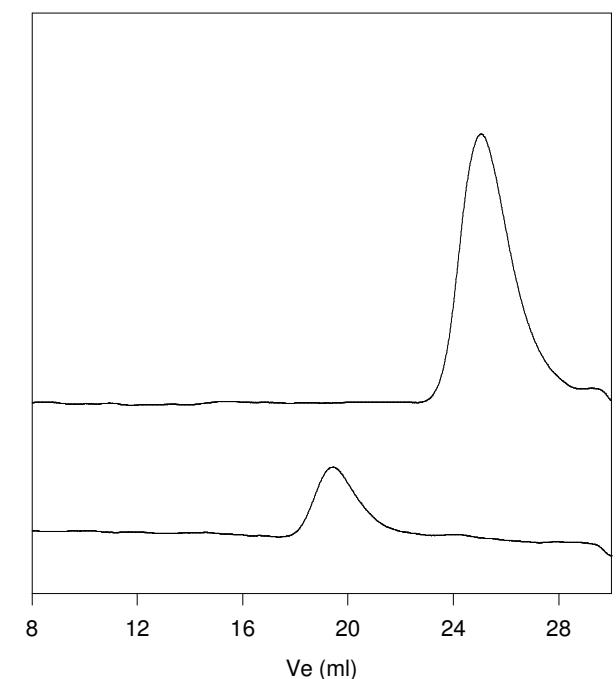
**Solubility:** Poly(isobutylene-b-methyl methacrylate) is soluble in THF, toluene and hexane.

**$^1\text{H-NMR}$  of the Polymer:**



**SEC profile of the block copolymer**

**P9239-IBMMA**



—— Polyisobutylene,  $M_n=5000$ ,  $M_w=6000$ ,  $PI=1.16$

—— Block Copolymer PIB(5000)-b-PMMA(500000),  $PI=1.7$

**DSC thermogram for MMA block:**

