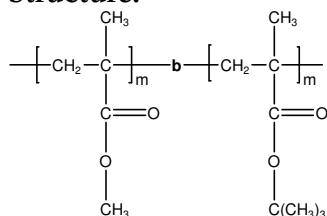


**Sample Name:** Poly(methyl methacrylate-b-t-butyl methacrylate)

**Sample #:** P8424-MMA<sub>t</sub>BuMA

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup>	PDI
PMMA-b-PtBuMA	
4.0-b-12.0	1.10
MMA block	Not distinct
t-BuMA block	107°C

**Synthesis Procedure:**

Poly(methyl methacrylate -b- t-butyl methacrylate) is prepared by living anionic polymerization by sequence addition of methyl methacrylate followed by addition of t-butyl methacrylate or vice versa. **In this case MMA was added first than tBuMA monomer.**

**Characterization:**

An aliquot of the anionic poly(methyl methacrylate) block was terminated before addition of t-butyl 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 <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the t-butyl methacrylate protons at about 1.43 ppm with the peak area of the methyl methacrylate protons at about 3.6 ppm. Copolymer PDI is determined by SEC.

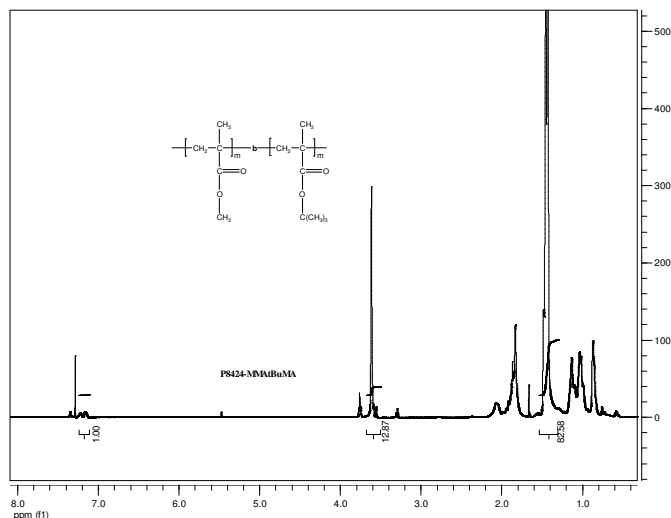
**Thermal analysis**

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/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<sub>g</sub>).

**Solubility:**

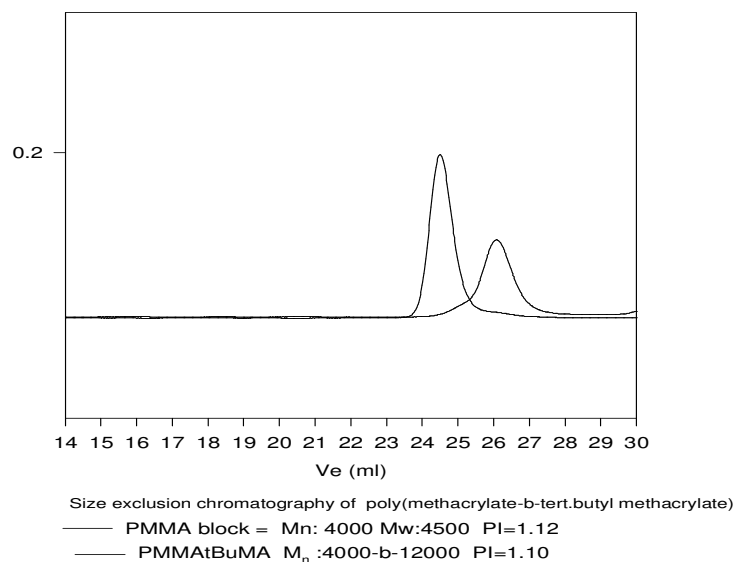
Poly(methyl methacrylate-b-t-butyl methacrylate) is soluble in THF, CHCl<sub>3</sub>, toluene and dioxane. The polymer precipitates from hexanes, methanol and ethanol.

**<sup>1</sup>H-NMR Spectrum of the block copolymer:**



**SEC of the block copolymer:**

**P8424-MMA<sub>t</sub>BuMA**



**DSC thermogram for t-BuMA block:**

