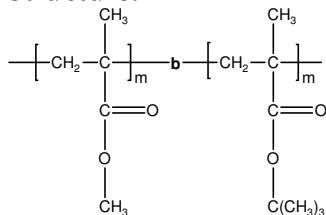


Sample Name: **Poly(methyl methacrylate-b-t-butyl methacrylate)**

Sample #: **P8421-MMA**t**BuMA**

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup>	PDI
PMMA-b-PtBuMA	
6.5-b-5.4	1.16
T <sub>g</sub> for MMA block	100°C
T <sub>g</sub> for tBuMA block	Not distinct

**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**

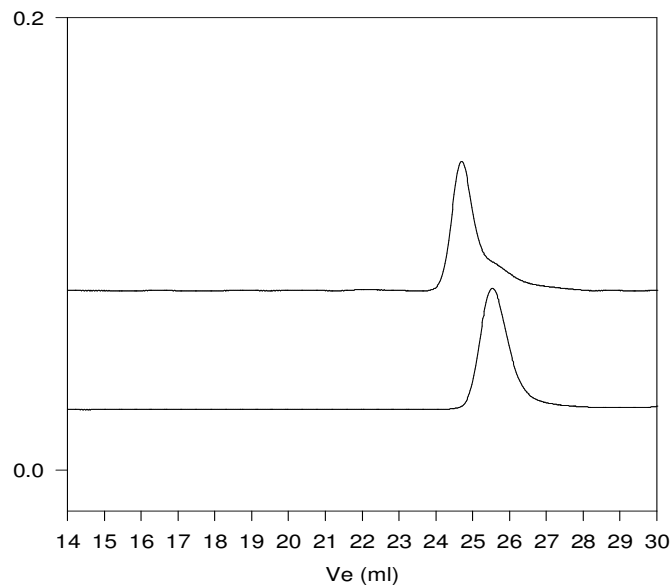
Thermal analysis of the sample was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T<sub>g</sub>) has been considered.

**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.

**SEC of the block copolymer:**

**P8421-MMA**t**BuMA**



Size exclusion chromatography of poly(methacrylate-b-tert.butyl methacrylate)

— PMMA block = Mn: 6500 Mw:7500 PI=1.15

— PMMA**t**BuMA M<sub>n</sub>:6500-b-5400 PI=1.16

**DSC thermogram for MMA block:**

