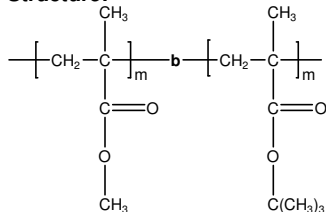


**Sample Name:** Poly(methyl methacrylate-b-t-butyl methacrylate)

**Sample #:** P8402-MMAAtBuMA

**Structure:**

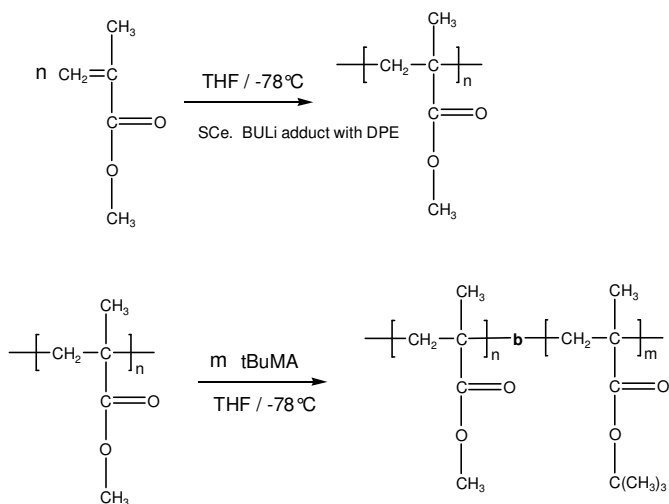


**Composition:**

Mn x 10 <sup>3</sup> PMMA-b-PtBuMA	PDI
8.0-b-22.0	1.09

**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. The scheme of the reaction is illustrated below:



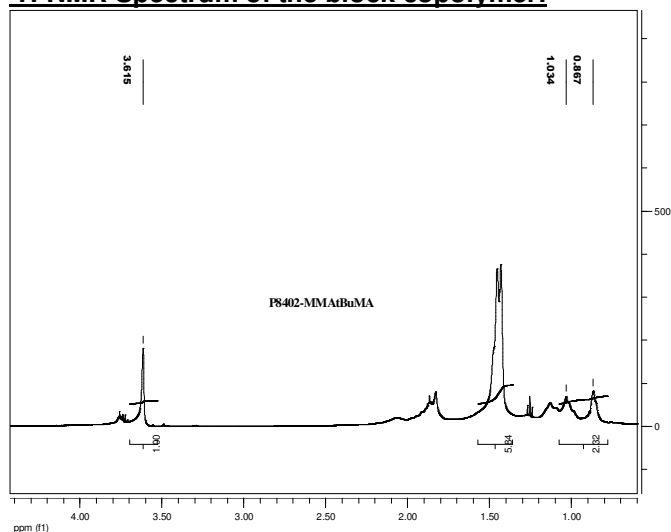
**Characterization:**

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.

**Solubility:**

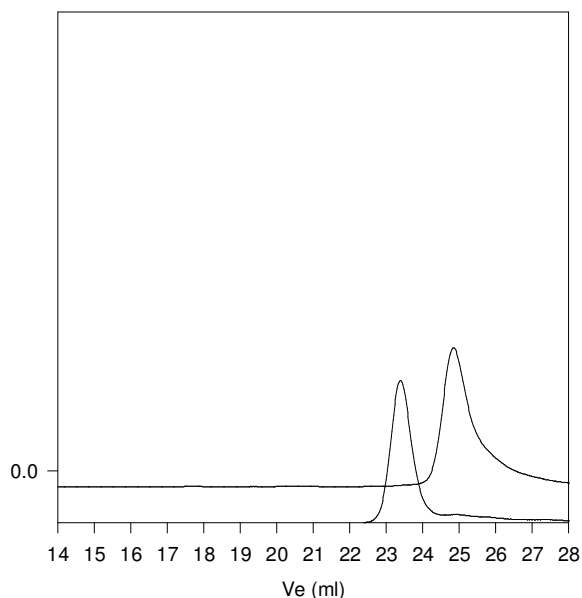
Poly(methyl methacrylate-b-t-butyl methacrylate) is soluble in THF, CHCl<sub>3</sub>, toluene and dioxane. The polymer precipitates from hexanes, methanol and ethanol.

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



**SEC of the block copolymer:**

**P8402-MMAAtBuMA**



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

— PMMA block = Mn: 8000 Mw:8700 PI=1.15

— PMMAAtBuMA Mn :8000-b-22000 PI=1.09