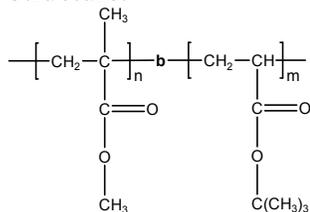


Sample Name: Poly(methyl methacrylate-*b*-*t*-butyl acrylate)

Sample #: P1425-MMA*t*BuA

Structure:



Composition:

Mn x 10 ³ PMMA- <i>b</i> -PtBuMA	PDI
18.3- <i>b</i> -80.0	1.15

Glass transition temperature at a glance

MMA block	Not distinct
<i>t</i>-BuA block	41°C

Synthesis Procedure:

Poly(methyl methacrylate-*b*-*t*-butyl acrylate) is prepared by living anionic polymerization with sequence addition of methyl methacrylate followed by addition of *t*-butyl acrylate.

Characterization:

An aliquot of the anionic poly(methyl methacrylate) block was terminated before addition of *t*-butyl acrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the *t*-butyl methacrylate protons at 1.43 ppm with the peak area of the methyl methacrylate protons at 3.6 ppm. Copolymer PDI is determined by SEC.

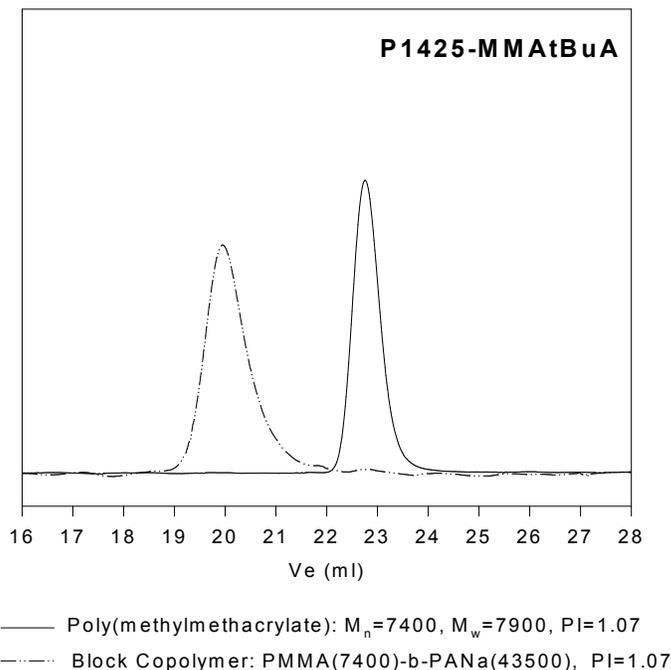
Thermal analysis

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_g) has been considered.

Solubility:

Poly(methyl methacrylate-*b*-*t*-butyl methacrylate) is soluble in THF, CHCl₃, toluene and dioxane. The polymer precipitates from hexanes, methanol and ethanol.

SEC of the block copolymer:



Thermogram for *t*BuA block

