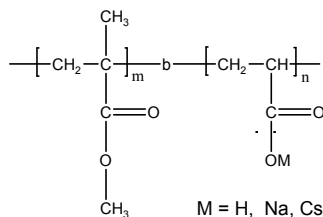


**Sample Name:** Poly(methyl methacrylate-b-acrylic acid)

**Sample #:** P8249A-MMAAA

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> PMMA-b-PAA	PDI
17.0-b-2.0	1.20
T <sub>g</sub> (°C) for MMA block: 120	T <sub>g</sub> (°C) for AA block: Not distinct

**Synthesis Procedure:**

Poly(methyl methacrylate -b- acrylic acid) is prepared by living anionic polymerization with sequence addition of methyl methacrylate followed by t-butyl acrylate or vice versa and hydrolysis of the t-butyl group.

**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 <sup>1</sup>H-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:**

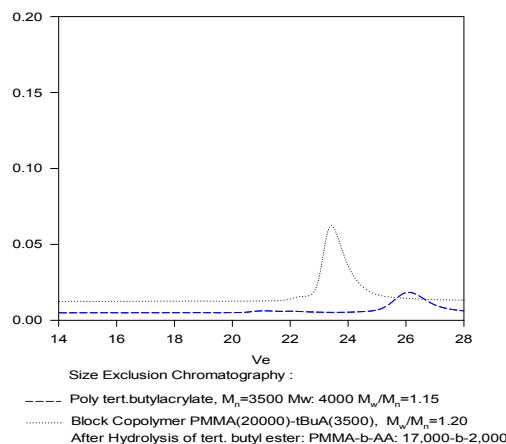
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T<sub>g</sub>).

**Solubility:**

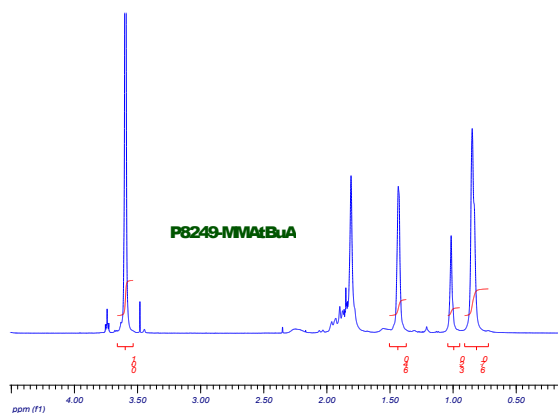
Poly(methyl methacrylate-b-acrylic acid) is soluble in methanol depending on the compositions. It is precipitated out from ether and hexane.

**SEC of the block copolymer:**

P8249-MMA-tBuA Precursor for P8249A-MMAAA



**NMR of the block copolymer:**



**DSC thermogram for MMA block:**

