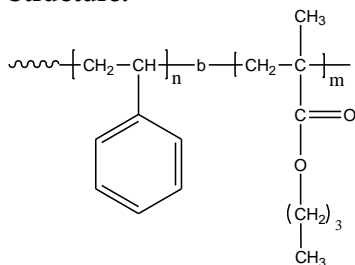


Sample Name: Poly(styrene-b-n-butyl methacrylate)

Sample #: P2489 SnBuMA

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> S-b-nBuMA	PDI
118-b-63	1.05

**Synthesis Procedure:**

Poly(styrene-b-n-butyl methacrylate) is prepared by anionic polymerization with sequence addition of styrene followed by n-butyl methacrylate.

**Characterization:**

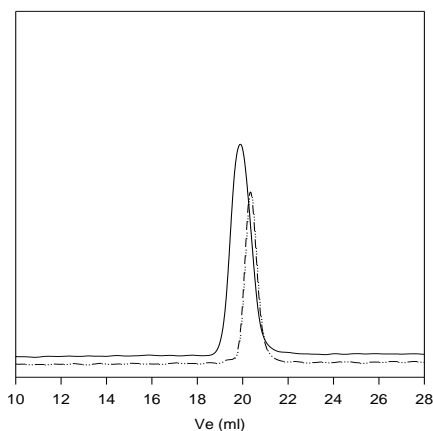
An aliquot of the polystyrene block was terminated before addition of n-butyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the styrene protons at 6.3-7.2 ppm with the peak area of s-butyl methacrylate protons at 3.9 ppm. Block copolymer PDI is determined by SEC.

**Solubility:**

Poly(styrene-b-n-butyl methacrylate) is soluble in CHCl<sub>3</sub>, THF, dioxane toluene and precipitated out from methanol/water.

**SEC profile of the block copolymer**

**P2489-SnBMA**



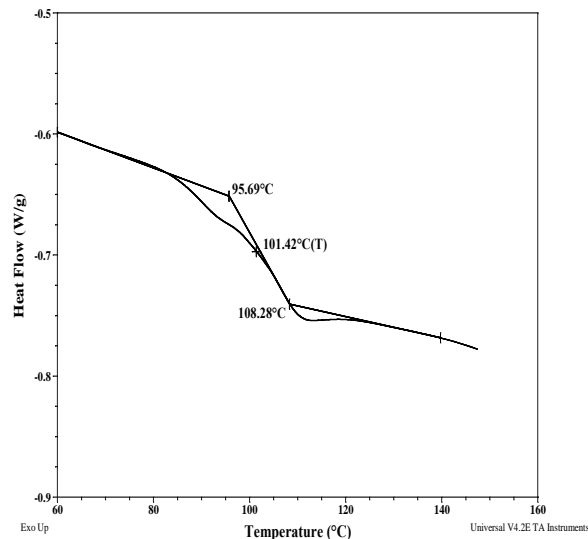
Size exclusion chromatography of polystyrene-b-poly(n-butyl methacrylate)

----- Polystyrene, M<sub>n</sub>=118000, M<sub>w</sub>=124500, PI=1.06  
—— Block Copolymer PS(118000)-b-PnBuMA(63000), PI=1.05  
(Composition from light scattering analysis)  
(From H NMR analysis PS(118000)-b-nBuMA(61500))

**Thermal analysis of sample P2489 SnBuMA**

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>).

**Thermogram of PS block:**



**Glass transition temperature at a glance**

T <sub>g</sub> for PS block	101°C
T <sub>g</sub> for tnBuMA block	33°C

**Thermogram for nBuMA block**

