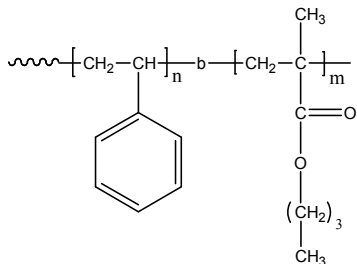


**Sample Name:** Poly(styrene-b-n-butyl methacrylate)

**Sample #:** P2456 SnBuMA

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> S-b-nBuMA	PDI
430-b-36.0	1.08

**Synthesis Procedure:**

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

**Characterization:**

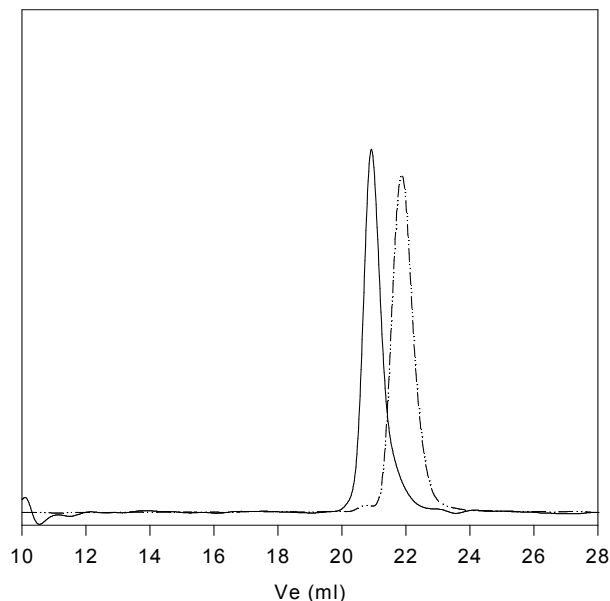
An aliquot of the polystyrene block was terminated before addition of n-butyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing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

**P2456-SnBMA**



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

----- Polystyrene, M<sub>n</sub>=43000, M<sub>w</sub>=46000, PI=1.07

———— Block Copolymer PS(43000)-b-PnBuMA(36000), PI=1.07  
(Composition from <sup>1</sup>H NMR analysis)

(From Light Scattering Mw: 87000 (viscosity:0.420dl/g in THF))

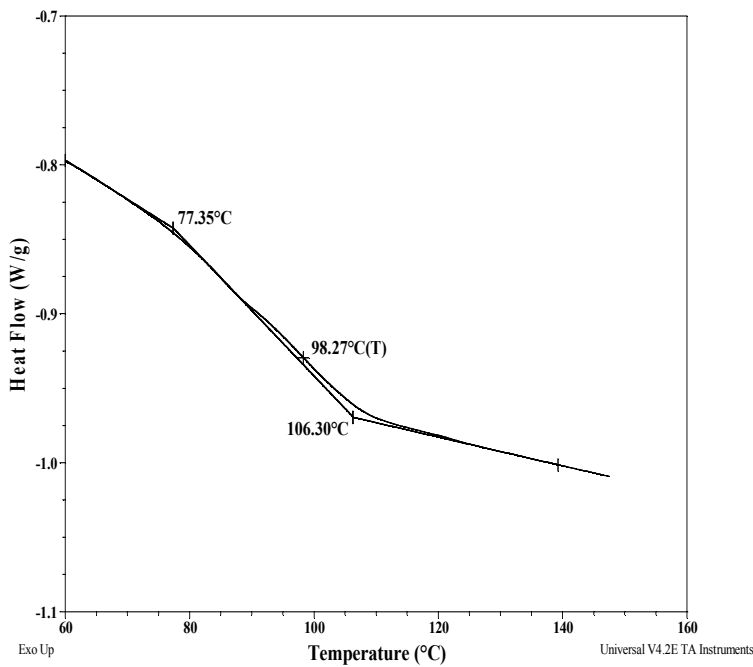
Thermal analysis of sample P2456 SnBuMA

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 ( $T_g$ ).

Glass transition temperature at a glance

$T_g$ for PS block	98°C
$T_g$ for tnBuMA block	26°C

Thermogram of PS block:



Thermogram for nBuMA block

