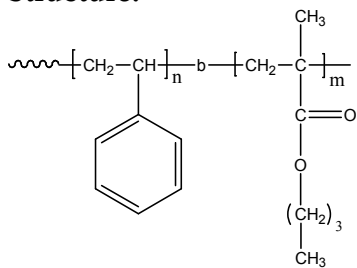


Sample Name: Poly(styrene-b-n-butyl methacrylate)

Sample #: P2490 SnBuMA

Structure:



Composition:

$M_n \times 10^3$ S-b-nBuMA	PDI
70.8-30.0	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:

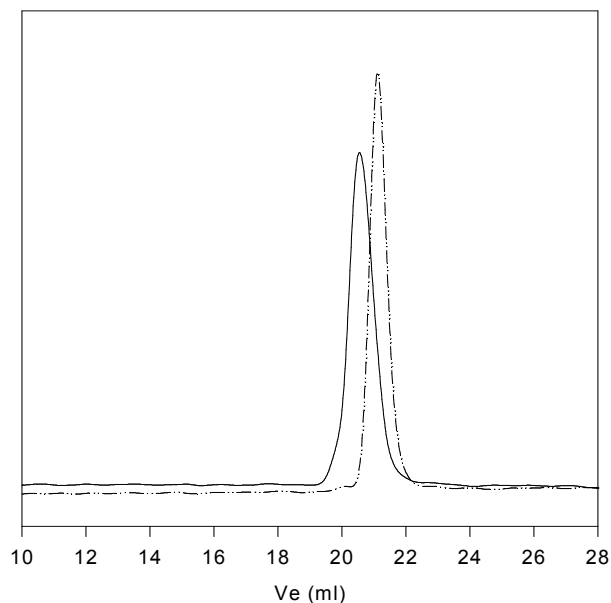
An aliquot of the polystyrene block was terminated before addition of n-butyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from $^1\text{H-NMR}$ spectroscopy by comparing 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_3 , THF, dioxane toluene and precipitated out from methanol/water.

SEC profile of the block copolymer

P2490-SnBMA



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

----- Polystyrene, $M_n=70800$, $M_w=73300$, $PI=1.03$
—— Block Copolymer PS(70800)-b-PnBuMA(36500), $PI=1.05$
(Composition from light scattering analysis)
(From $^1\text{H NMR}$ analysis PSt(70800)-b-nBuMA(30000))

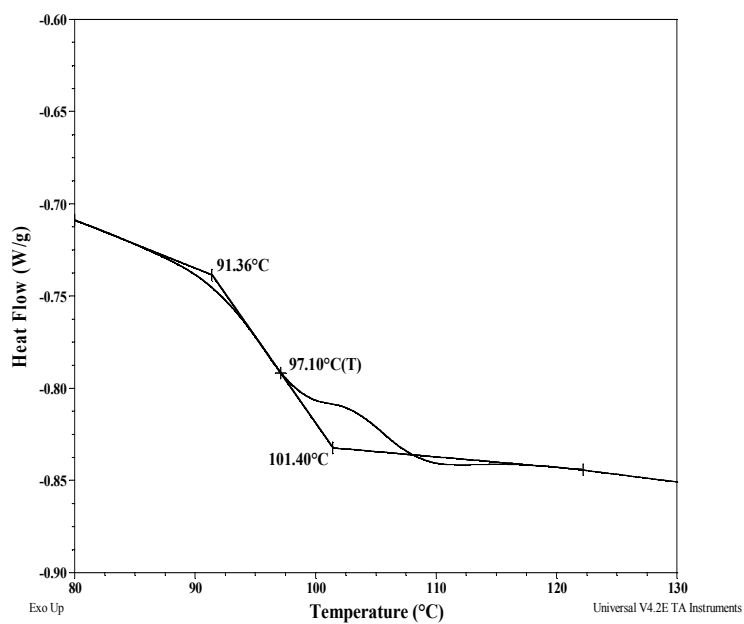
Thermal analysis of sample P2490 SnBuMA

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	97°C
T_g for tnBuMA block	29°C

Thermogram of PS block:



Thermogram for nBuMA block

