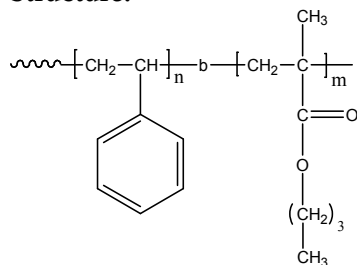


Sample Name: Poly(styrene-b-n-butyl methacrylate)

Sample #: P2429 SnBuMA

Structure:



Composition:

Mn x 10 ³ S-b-nBuMA	PDI
32-b-31.0	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.

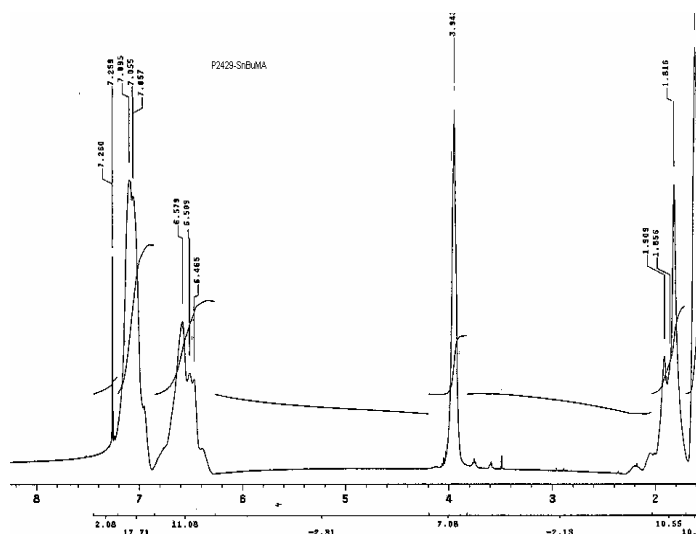
Characterization:

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 ¹H-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.

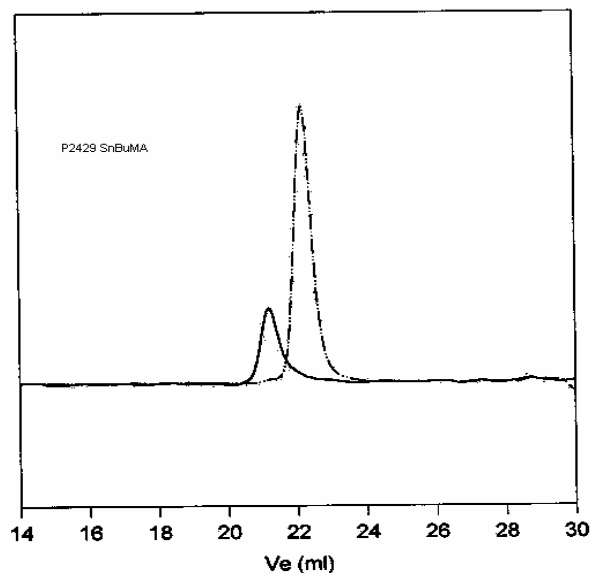
Solubility:

Poly(styrene-b-n-butyl methacrylate) is soluble in CHCl₃, THF, dioxane toluene and precipitated out from methanol/water.

¹H-NMR of the block copolymer



SEC profile of the block copolymer



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

— Polystyrene, M_n=32000, M_w=33300, PI=1.04

— Block Copolymer PS(32000)-b-PnBuMA(31000), PI=1.08

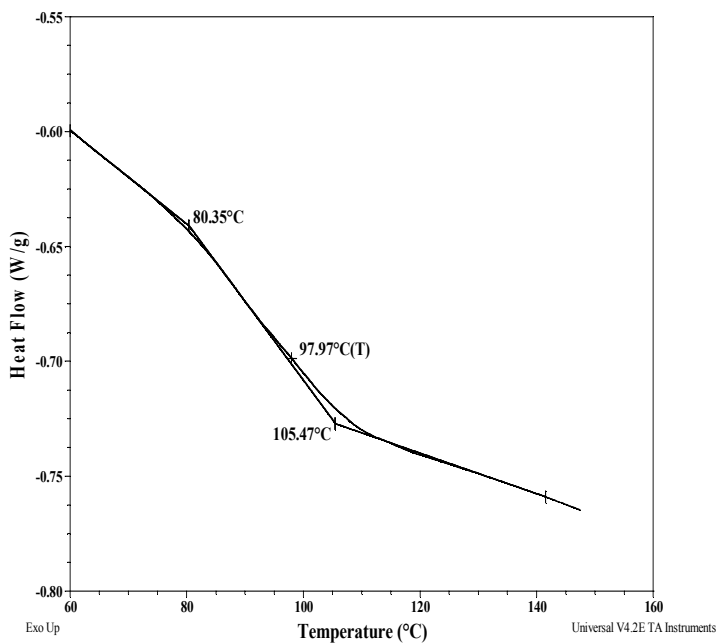
Thermal analysis of sample P2429 SnBuMA

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 nBuMA block	23°C

Thermogram of PS block:



Thermogram for nBuMA block

