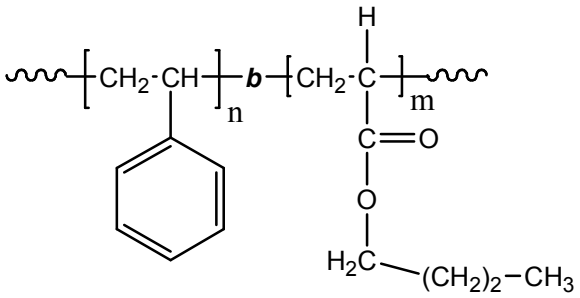
Sample Name: Poly(styrene-b-n-butyl acrylate)

Sample #: P1225-SnBuA

Structure:

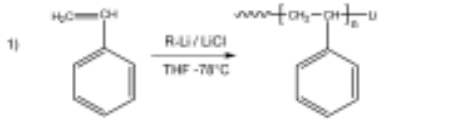


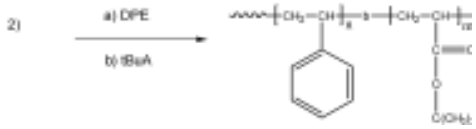
Composition:

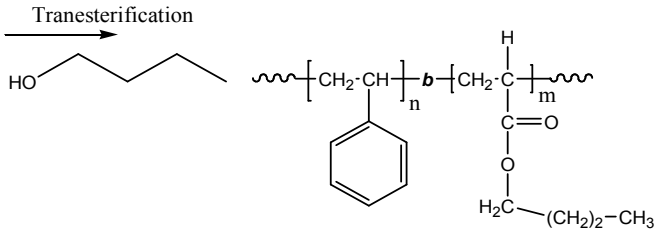
Mn x 10^3 S-b-nBuA	PDI
66.2-b-32.0	1.05

Synthesis Procedure:

Poly(styrene-b-n-butyl acrylate) is prepared bythe tranesterification of the poly (Styrene-b-tert.butyl acrylate) di block copolymer. The scheme of the reaction is illustrated below:







Characterization:

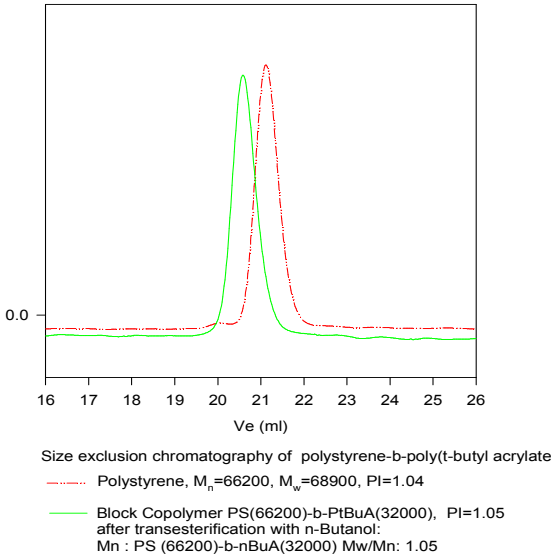
An aliquot of the polystyrene block was terminated before addition of methyl acrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ^{1}H-NMR spectroscopy by comparing the peak area of the styrene protons at 6.3-7.2 ppm with the peak area of t-butyl acrylate protons at 1.43 ppm. Block copolymer PDI is determined by SEC.

Solubility:

Polymer is soluble in $CHCl_3$, THF and toluene.

SEC of the block copolymer:

P1225-StBuA precursor for P1225-SnBuA



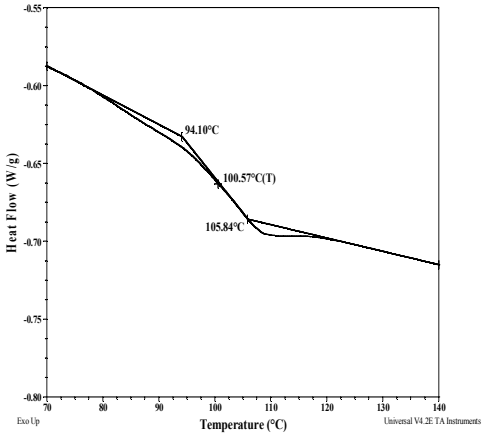
Thermal analysis of sample P1225-SnBuA

Thermal analysis of the sample was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min.The inflection glass transition temperature (T_g) has been considered.

Glass transition temperature at a glance

MMA block	**101°C**
n-BuA block	**-48°C**

Thermogram for PS block



Thermogram for nBuA block