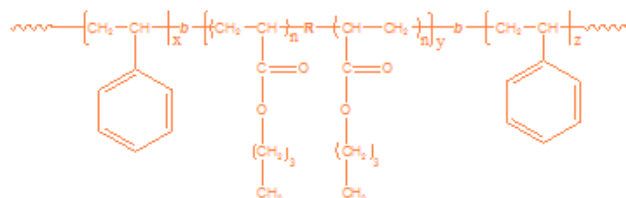


Sample Name:

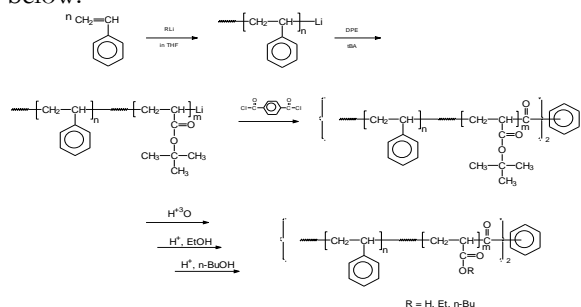
Poly(Styrene -b-n-butyl acrylate-b-Styrene)

Sample #: P2974-SnBuAS**Structure:****Composition:**

Mn x 10 ³	PDI
3.0-b-50.0-b-3.0	1.30
T _g for nBuA block	-41°C
T _g for PS block	83°C

Synthesis Procedure:

The copolymer was prepared by a coupling reaction of poly(styrene-*t*-butylacrylate) anion with bis-acid chloride at -30°C [Ref. *S. K. Varshney et al., Macromolecules*, **32**, 235, 1999]. The acid block was obtained by a hydrolysis reaction, and the other ester (ethyl, *n*-butyl) blocks were prepared by a transesterification. The scheme of the reaction is illustrated below:

**Characterization:**

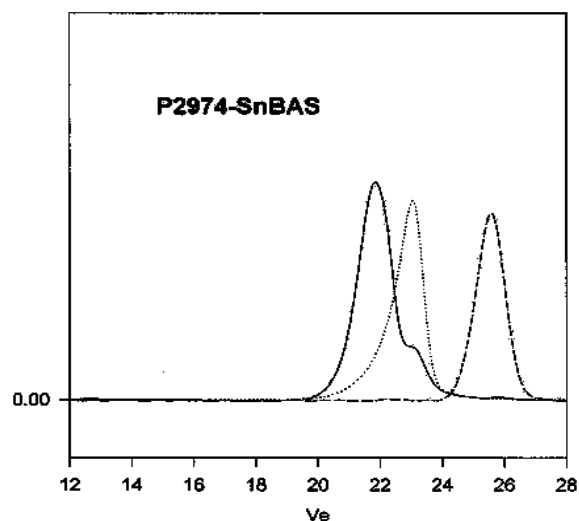
The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector.

Thermal analysis:

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).

Solubility:

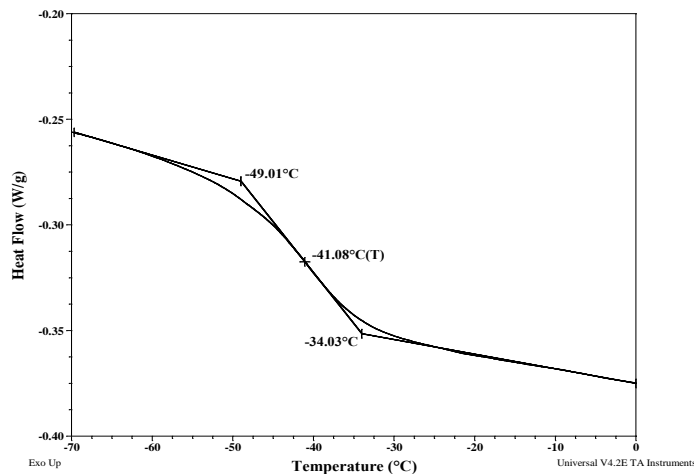
Polymer is soluble in THF, toluene and CHCl₃. It precipitates from methanol, ethanol, water and hexanes (depending on the compositions).

SEC of Sample:

Size Exclusion Chromatography of:

..... P2974-St, the first PS block, M_n=3000, PI=1.14

----- P2974-SBuA, the diblock PS(3000)-b-PtBA(24500), PI=1.28

—— P2974-SnBAS, the triblock PS(3000)-b-PnBA(50000)-b-PS(3000), PI=1.30
After transesterification of tert.butylacrylate**DSC thermogram for nBuA block:****DSC thermogram for PS block:**