

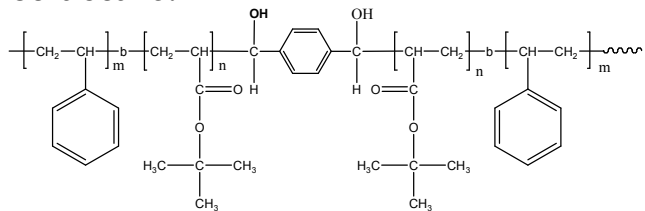
Sample Name:

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

Bearing OH group at the linkage

Sample #: **P10081-StBuAS**

Structure:



Composition:

Mn x 10 ³ (S-b-tBuA-S)	PDI
16.0-b-54.0-b-16.0	1.28
T _g for tBuA block: 46 °C	T _g for PS block: 95 °C

Synthesis Procedure:

Poly(styrene -b- tert.butylacrylate -b- styrene) is prepared by living anionic polymerization. The details are reported in the reference.

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.

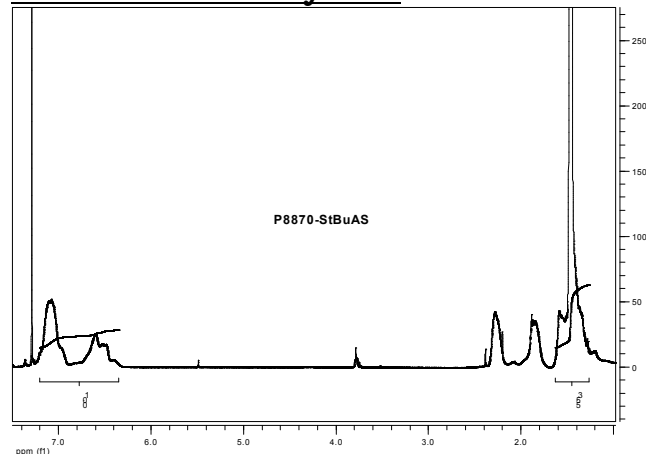
Thermal analysis:

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:

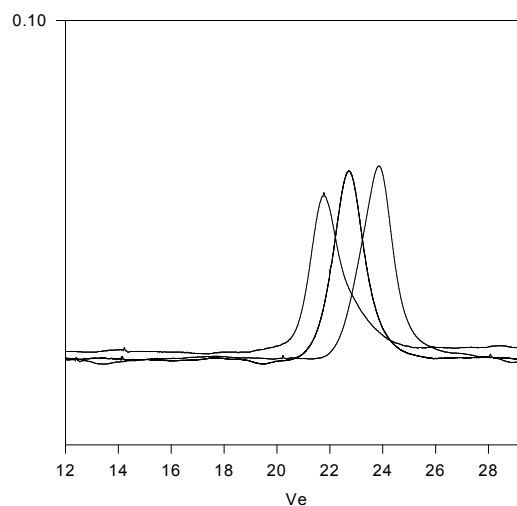
Polymer is soluble in THF, toluene and CHCl₃. It precipitates from methanol, ethanol, water and hexanes (depending on the compositions).

H NMR Of the Polymer:



SEC of Sample:

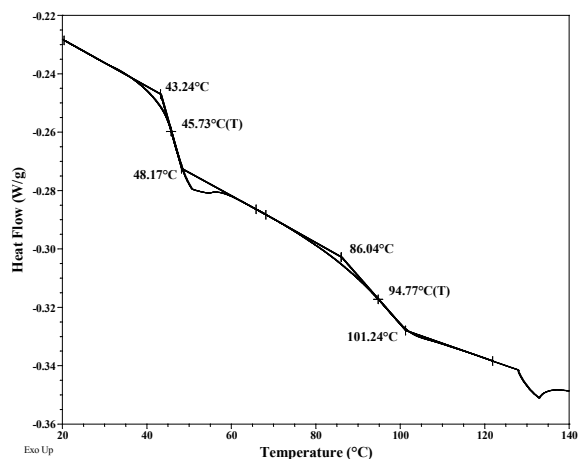
P10081-StBuAS



Size Exclusion Chromatography of:

- PS, the first PS block, M_n=16,000, PI=1.10
- - - PStBuA, the diblock PS(16,000)-b-PtBuA(27,000), PI=1.19
- StBuAS, the triblock PS(16,000)-b-PtBuA(54,000)-b-PS(16,000), PI=1.28

DSC thermograms for the polymer:



Reference:

S.K. Varshney, P.Kesani, N. Agarwal, J. Xin. Zhang, & M. Rafailovich. Synthesis of ABA type thermoplastic elastomers based on Polyacrylates. Macromolecules,1999, 32,235.

