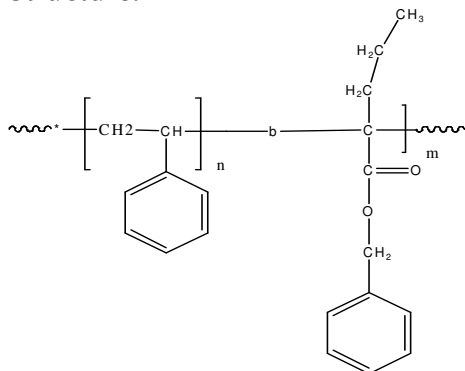


Sample Name: Poly(styrene-b- benzyl propylacrylate)

Sample #: P9547-SBzPrA

Structure:



Composition:

$M_n \times 10^3$ S-b-PrBzA	PDI
120.0-b-14.0	1.07
T_g (°C) for PS block: 96	T_g (°C) for PrBzA block: Not distinct

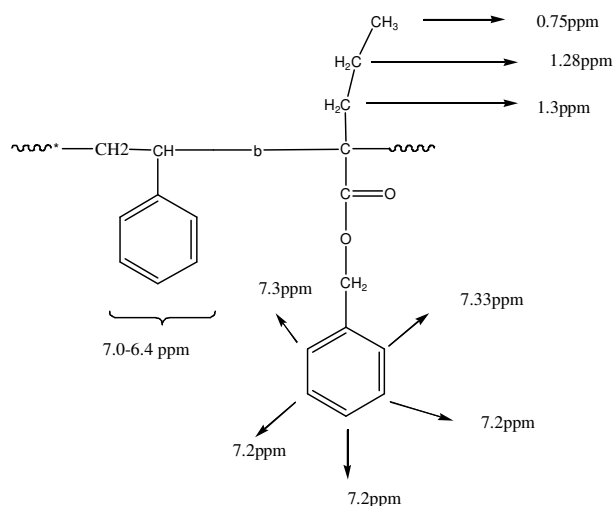
Synthesis Procedure:

Poly(styrene-b- α -propyl benzylacrylate) is prepared by living anionic polymerization in THF at -78°C .

Characterization:

An aliquot of the anionic polystyrene block was terminated before addition of PrBzA and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from $^1\text{H-NMR}$. Copolymer M_w/M_n is determined by SEC.

Chemical Shifts:

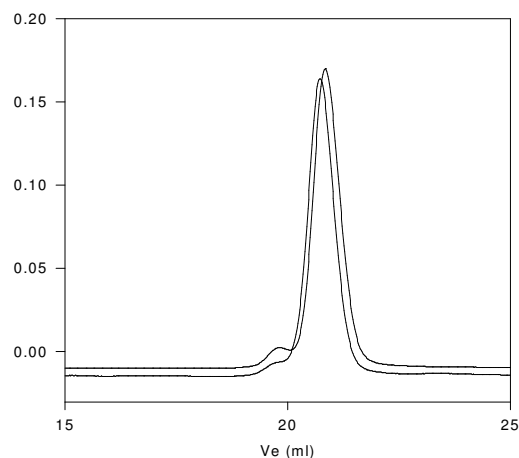


Solubility:

Polymer is soluble in THF, toluene, dioxane and CHCl_3 . This polymer readily precipitates from methanol, ethanol, hexanes and water.

SEC for the sample :

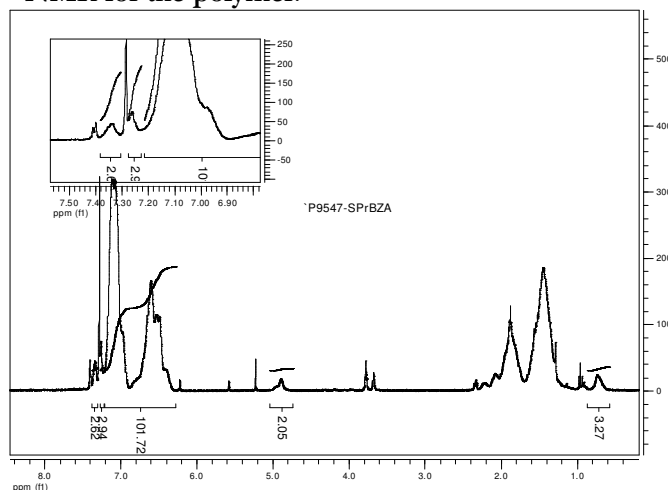
P9547-SPrBzA



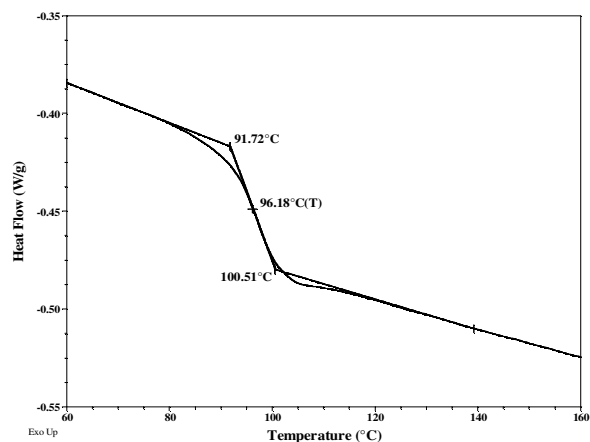
Size Exclusion chromatography of poly (styrene-b- Propyl benzyl acrylate):

— Polystyrene, $M_n=120,000$, $M_w=126,000$, $PI=1.05$
— Block Copolymer: PS(120,000)-b-PrBzA(14,000), $PI=1.07$
Composition from H NMR

$^1\text{H-NMR}$ for the polymer:



DSC thermogram for PS block:



References for further information:

1. S. K. Varshney, R. Fayt, Ph. Teyssie, and J.P. Hautekeer US Patent 5,264,527 (1993)
2. Ph. Teyssie, R. Fayt, **S. K. Varshney**, and C. Jacobs Eur. Pat. Appl., Jan 16, 1991 Eur.Pat.408420
Patent Assignees- Atochem S.A France. CA. Vol 114, 26, 247998." Star Block Copolymers based on Acrylates and Methacrylates and their Manufacture process".
3. Ph.Teyssie, R. Fayt, and **S. K. Varshney**, Eur. Pat. Appl. Dec. 12, 1990. Eur. Pat.402204
Patent Assignees-Norsolor S.A. France. CA Vol 114, 20, 186314."Catalyst for the the Anionic Living Polymerization (Meth)acrylates".