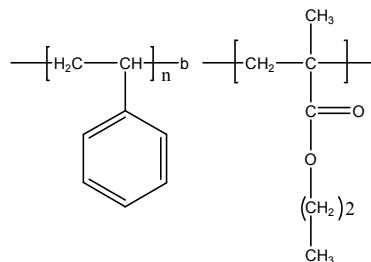


Sample Name: Poly(styrene-b-n-propyl methacrylate)

Sample #: P2455-SnPrMA

Structure:

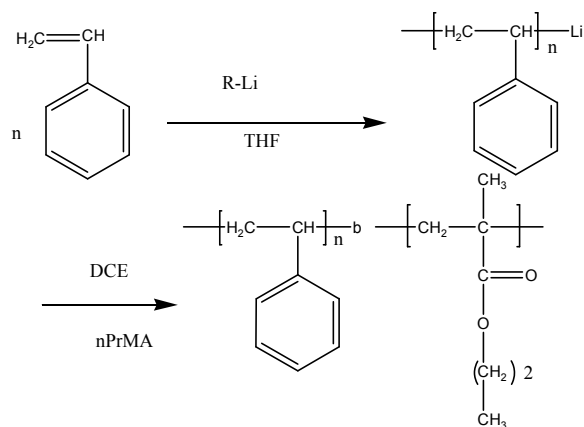


Composition:

Mn x 10 ³ S-b-nPrMA	Mw/Mn (PDI)
38.0-b-33.0	1.11
T _g for PS block: 89°C	T _g for nPrMA block: 59°C

Synthesis Procedure:

Poly(styrene-b- n-propyl methacrylate) is synthesized by living anionic polymerization with sequence addition of styrene followed by n-propyl methacrylate. The reaction scheme is shown below:



Characterization:

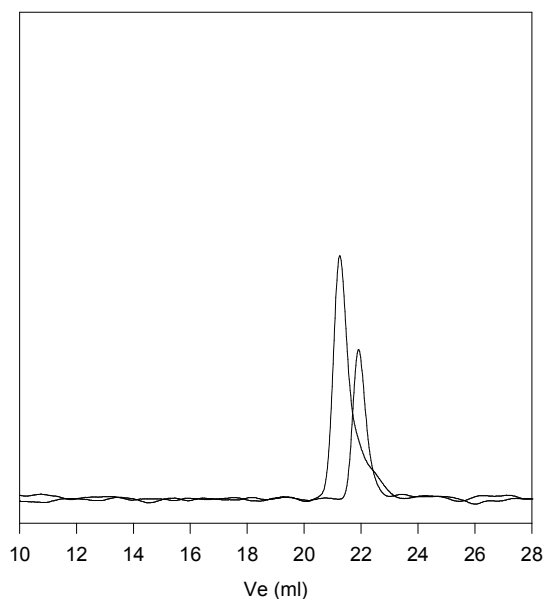
An aliquot of the anionic polystyrene block was terminated before addition of isoprene and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The block copolymer composition was then calculated from ¹H-NMR spectroscopy by comparing the peak area of the polystyrene protons at about 6.3-7.2 ppm with the n-butyl methacrylate protons at 3.9 ppm. Copolymer PDI is n-determined by SEC.

Solubility:

The block polymer is soluble in CHCl₃, THF and toluene

SEC of Sample of the block copolymer:

P2455-SnPrMA



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

— Polystyrene, M_n=38000, M_w=39500, PI=1.04
 — Block Copolymer PS(38000)-b-PnPrMA(33000), PI=1.11
 (Composition from ¹H NMR analysis)

DSC thermogram for diblock polymer:

