

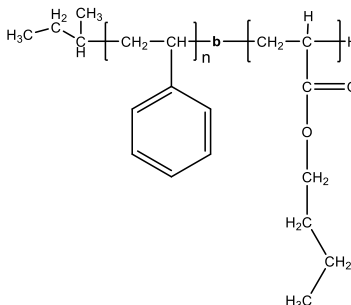
Product Profile

Identification

Product Name: Poly(styrene)-b-poly(n-butyl acrylate)

Product Lot Number: P45147A-SnBuA

Product Chemical Architecture:



Composition:

| | |
|-------------------------------------|-------------|
| Mn x 10 ³ P(S-b-tBuA) | Mw/Mn (PDI) |
| 135.0-b-88.0 | 1.09 |
| PolyStyrene: 65 mole% | |

Method of Synthesis

Poly(styrene-b-tert.acrylate) is prepared by living anionic polymerization in THF at -78 °C using sec.BuLi initiator adduct with α-methyl styrene in the presence of LiCl. tert.butyl acrylate (tBuA) monomer was added after dilution in THF. More details are available in the published literature.1-3

1. S. K. Varshney, R. Fayt, Ph. Teyssie, and J.P. Hautekeer US Patent 5,264,527 (1993)
2. Ph. Teyssie, R. Fayt, J. P. Hautekeer, C. Jacobs, R. Jerome, L. Leemans and S. K. Varshney Makromolekular Chemie, Macromol. Symp., 1990, 32,61-73.
3. S. K. Varshney, J. P. Hautekeer, R. Fayt, R. Jerome, and Ph.Teyssie Macromolecules, 1990, 23, 2618-2622.

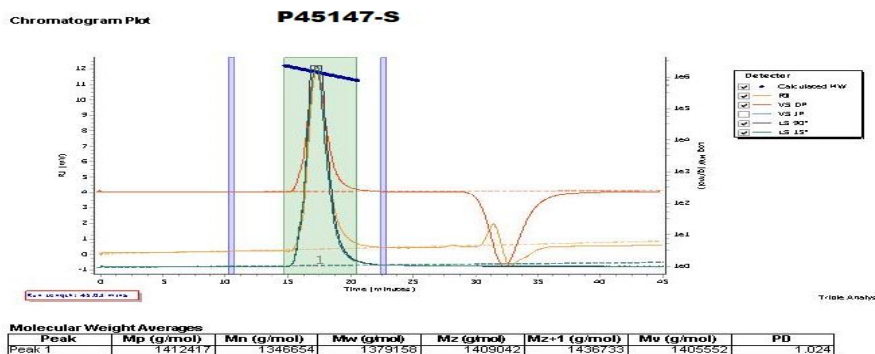
Solubility in different solvents

| | | | |
|-------------------|---|--------------|---|
| THF | √ | | |
| CHCl ₃ | X | DMF | √ |
| Toluene-Hot | X | THF-Methanol | √ |

Purification of Polymer to remove any homo polystyrene fractions.

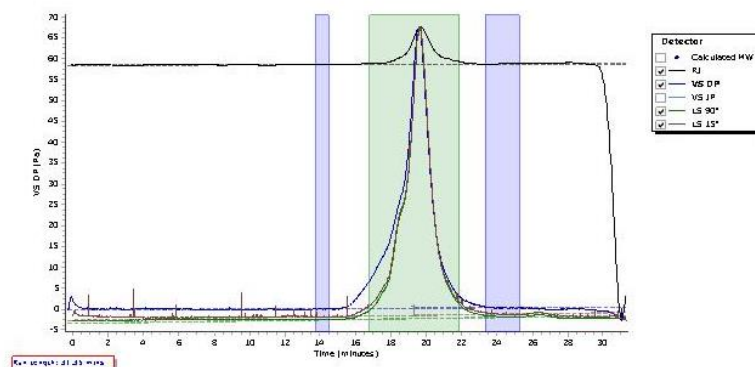
Validation of Architecture:

A. Gel Permeation Chromatography (GPC), SEC- Profile



Chromatogram Plot

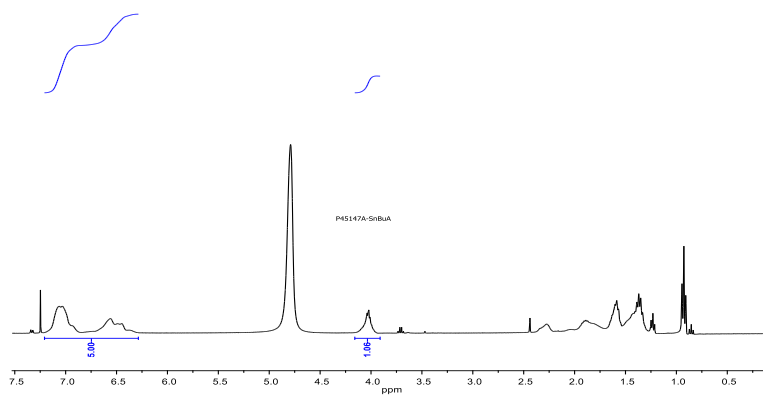
P45147A-SnBuA



Molecular Weight Averages

| Peak | Mp (g/mol) | Mn (g/mol) | Mw (g/mol) | Mz (g/mol) | Mz+1 (g/mol) | Mv (g/mol) | PD |
|--------|------------|------------|------------|------------|--------------|------------|------|
| Peak 1 | 236681 | 223503 | 243595 | 267380 | 297239 | 272214 | 1.09 |

B. HNMR of deblock copolymer
Poly(Styrene-b-n.butylacrylate)



Poly(styrene-b-nButylacrylate)

