

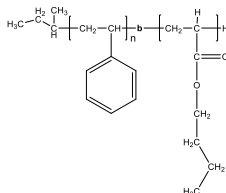
Product Profile

Identification

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

Product Lot Number: P45158A-SnBuA

Product Chemical Architecture:



Composition:

Mn x 10 ³ P(S-b-nBuA)	Mw/Mn (PDI)
100.0-b-105.0	1.13
PolyStyrene: 53 mole%	

Method of Synthesis

Poly(styrene-b-n.acrylate) is prepared by living anionic polymerization in THF at –78 oC 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. The obtained polymer converted to Poly(s-b-n-Butyl acrylate) by transesterification in presence of n butanol. Over 99% reaction verified by its HNMR spectrum.

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.

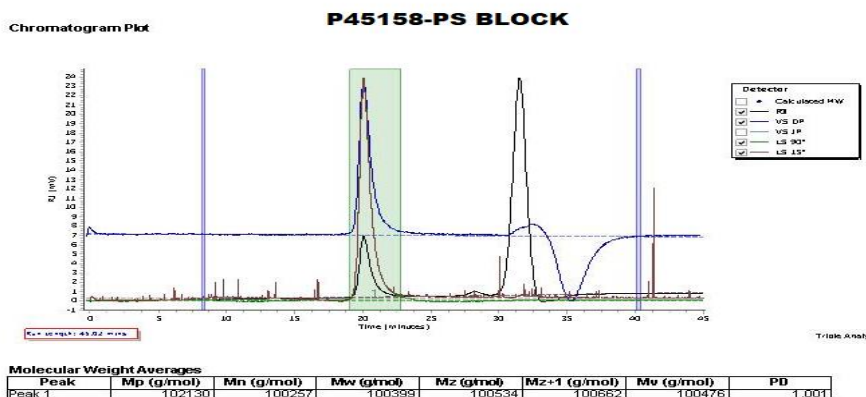
Solubility in different solvents

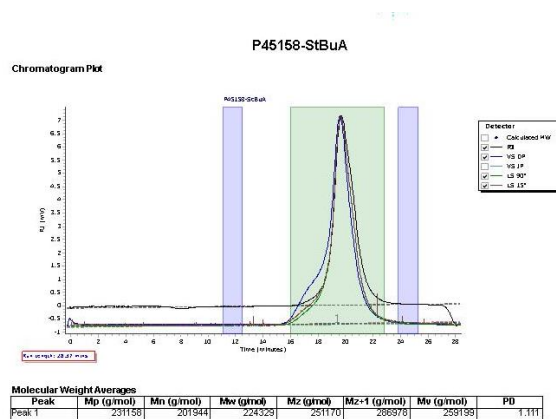
THF	√		
CHCl ₃	X	DMF	√
Toluene-Hot	X	THF-Methanol	√

Purification of Polymer to remove any homo polystyrene fractions.

Validation of Architecture:

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





After conversion to P(S-b-nBuA)

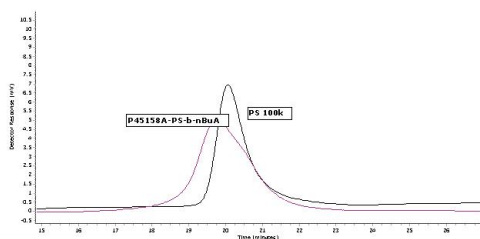
Agilent GPC/SEC Software
Reviewer Report



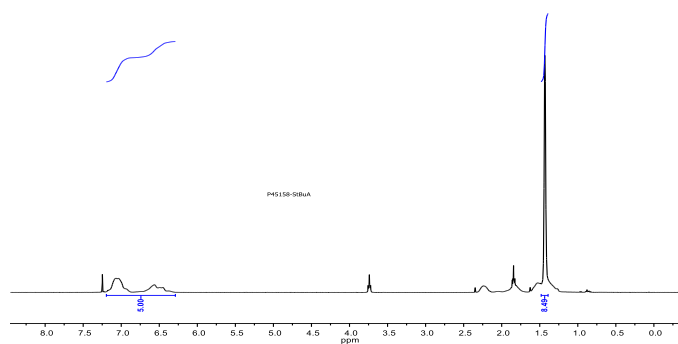
Workspace Details

Workspace name: Calibration 2025-01-13
Location: D:\GPC\Workspaces\Calibration 2025-01-13\
Comments:
Created by: Agilent2 at 11:17:56 AM on January 13, 2025

Chromatogram Plot



B. HNMR of the polymer run in CdCl₃: P(S-b-tBuA)



C. HNMR of the polymer run in CdCl₃: P(S-b-nBuA)

