

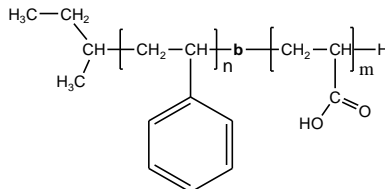
Product Profile

Identification

Product Name: Poly (styrene-*b*- Acrylic acid)

Product Lot Number: P44614-SAA

Product Chemical Architecture:



Composition:

Mn x 10 ³ P(S- <i>b</i> -AA)	Mw/Mn (PDI)
27-59	1.35
Dp of each block: A-B from ¹ H NMR S ₂₅₉ - <i>b</i> -AA ₆₂₈	

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.

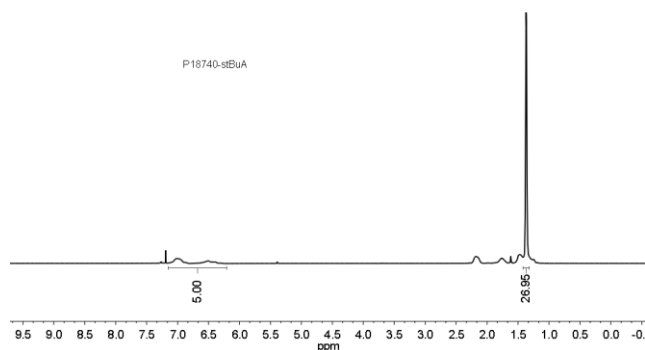
Solubility in different solvents

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

Purification of Polymer to remove any homo polystyrene fractions.

Validation of Architecture:

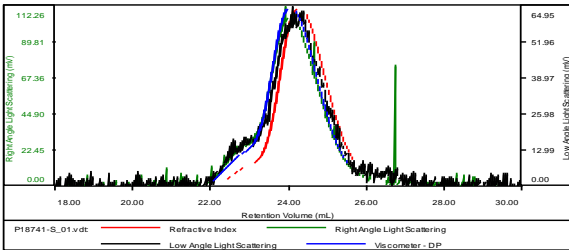
A. ¹H NMR for the polymer: Lot# P18741-StBuA



B. SEC for the sample:

Sample ID: P18741-S

Concentration (mg/mL)	30.9327
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-June14-2014-0001.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn	Mw	Mp	Mw/Mn	IV
P18741-S_01.vdt	27,127	30,590	27,062	1.128	0.0704

