

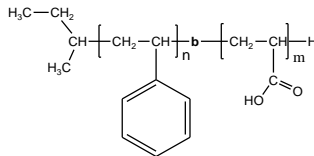
# Product Profile

## Identification

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

**Product Lot Number:** P44611-SAA

**Product Chemical Architecture:**



## Composition:

Mn x 10 <sup>3</sup> P(S-b-AA)	Mw/Mn (PDI)
39.0-56.0	1.35
Dp of each block: A-B from <sup>1</sup> H NMR S <sub>375</sub> -b-AA <sub>777</sub>	

**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.<sup>1-3</sup>

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.

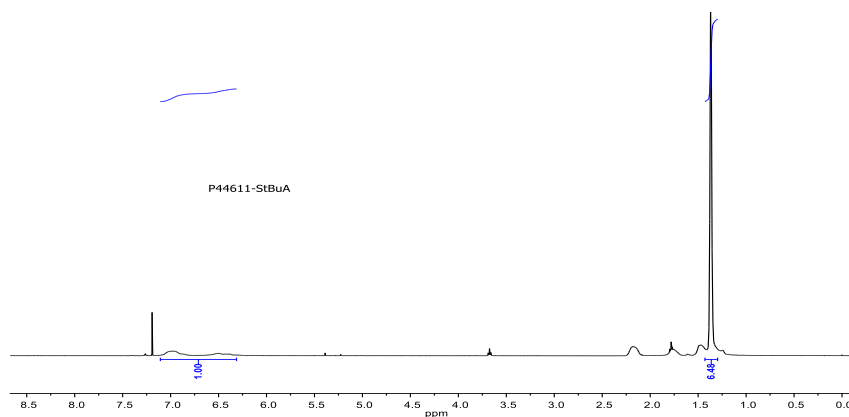
## Solubility in different solvents

THF	√	DMF	√
CHCl <sub>3</sub>	X	THF-Methanol	√
Toluene-Hot	X		

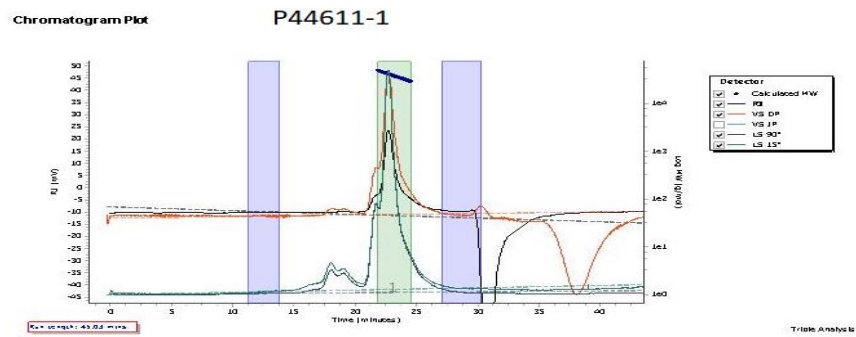
**Purification of Polymer** to remove any homo polystyrene fractions.

## Validation of Architecture:

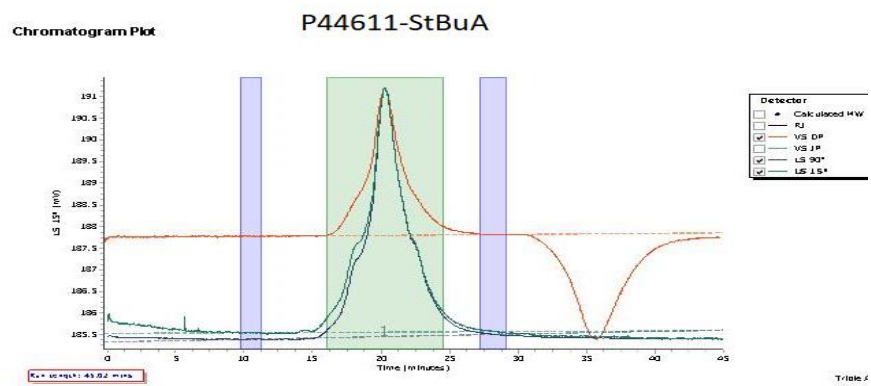
### A. <sup>1</sup>H NMR spectrum of the StBuA:



B. SEC for the sample:



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	42113	39311	39943	40539	41094	40482	1.016



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	211868	140177	183012	234572	299154	232299	1.306