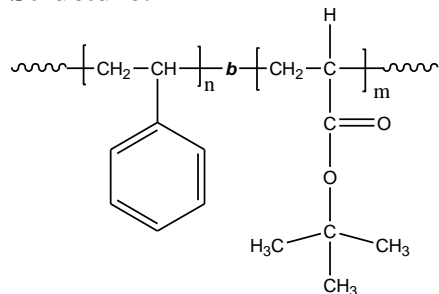


Sample Name: Poly(styrene-b-tert.butylacrylate)

Sample #: P308-StBuA

Structure:

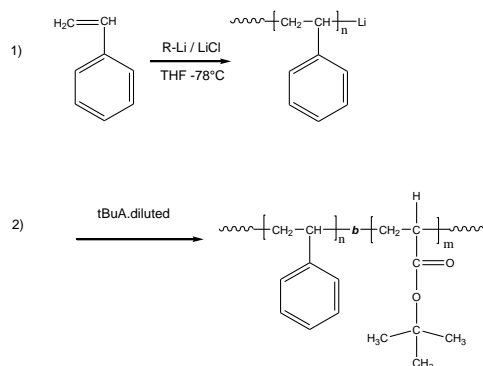


Composition:

Mn x 10 ³ S-b-tBuA	PDI
294.0-b-306.0	1.3

Synthesis Procedure:

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. For further details please see our published articles.¹⁻⁵ The scheme of the reaction is illustrated below:



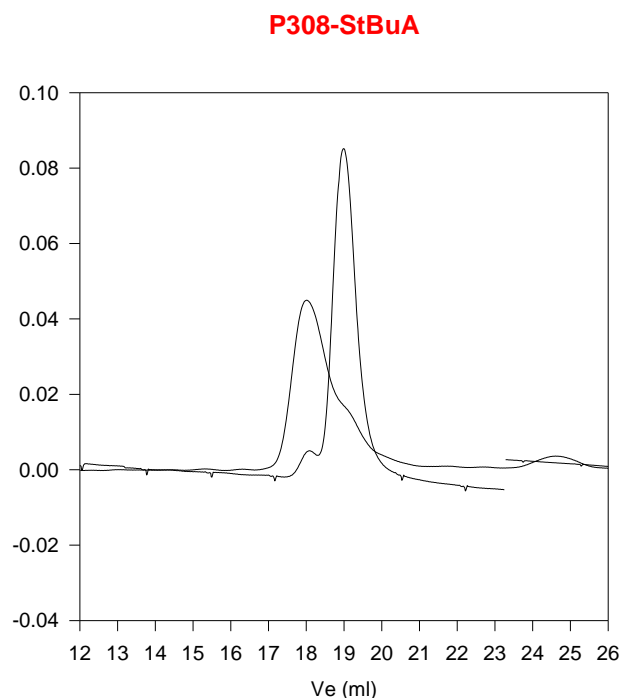
Characterization:

An aliquot of the anionic polystyrene block was terminated before addition of tBuA and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR Copolymer Mw/Mn is determined by SEC.

Solubility:

Poly(styrene-b-tert.butylacrylate) is soluble in THF, toluene, dioxane and CHCl₃. This polymer readily precipitates from methanol, ethanol, hexanes and water.

SEC of Sample :



Size exclusion chromatography of polystyrene-b-poly(t-butyl acrylate)

— Polystyrene, M_n=294000, M_w=313000, PI=1.07

— Block Copolymer PS(294000)-b-PtBuA(306000), PI=1.3

References for further information:

1. S. K. Varshney, R. Fayt, Ph. Teyssie, and J.P. Hautekeer US Patent 5,264,527 (1993)
2. Ph. Teyssie, R. Fayt, **S. K. Varshney**, and C. Jacobs Eur. Pat. Appl., Jan 16, 1991 *Eur.Pat.408420*
Patent Assignees- Atochem S.A France. CA. Vol 114, 26, 247998." Star Block Copolymers based on Acrylates and Methacrylates and their Manufacture process".
3. Ph.Teyssie, R. Fayt, and **S. K. Varshney**, *Eur. Pat. Appl. Dec. 12, 1990. Eur. Pat.402204*
Patent Assignees-Norsolor S.A. France. CA

- Vol 114, 20, 186314."Catalyst for the the Anionic Living Polymerization (Meth)acrylates".
4. **S. K. Varshney**, R. Fayt and Ph. Teyssie Eur. Pat. Appl. Dec. 12, 1990. Eur. Pat. 402219 Patent Assignees- Norsolor S.A France. CA Vol 114, 22, 208036. "Procedure and Anionic Polymerization Catalyst for Acrylic Monomers".
 5. **S. K. Varshney**, R. Fayt, Ph. Teyssie, and J. P. Hautekeer, Eur. pat. Appl. Jan 16, 1991. Eur. Pat. 408429 Patent assignees-Norsolor S.A France. CA Vol. 115, 10, 094237."Acrylic Triblock Copolymers and their Preparation and use as Rubbers
 6. Ph. Teyssie, Ph. Bayard, R. Jerome, S. K. Varshney, and J. S. Wang, *35th IUPAC International Union of Pure & Applied Chemistry International Symposium on Macromolecules* 1994, 67.
 7. 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.
 8. S. K. Varshney, J. P. Hautekeer, R. Fayt, R. Jerome, and Ph.Teyssie *Macromolecules*, 1990, 23, 2618-2622.
 9. R. Jerome, R. Forte, S. K. Varshney, R. Fayt, and Ph. Teyssie "The Anionic Polymerization of Alkylacrylates:A Challenge" in the Recent Advances in Mechanistic and Synthetic Aspects of Polymerization: M. Fontanille and A. Guyot Ed., NATO ASI Series C 215,101 (1987), CA Vol. 108, 12, 094992.