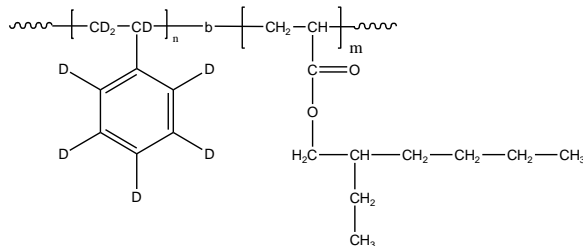
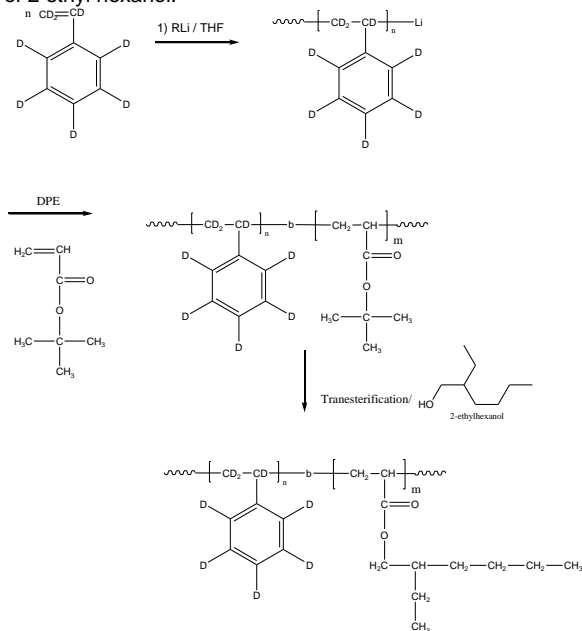


Sample Name:**Deuterated polystyrene (d₈)- poly 2-ethylhexylacrylate(protonated)****Sample #: P9445A-dPSEtHA****Structure:****Composition:**

Mn x 10 ³	PDI
10.0-b-10.0	1.15

Synthesis Procedure:

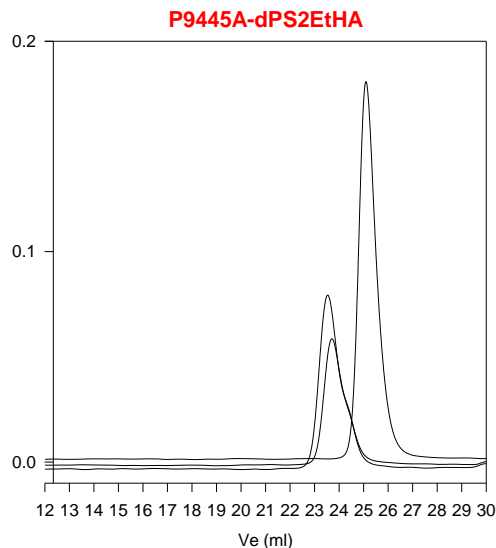
Deuterated poly(styrene (D₈)-b-t-butyl acrylate) is prepared by living anionic polymerization in THF at -78 °C using sec.BuLi initiator in the presence of LiCl. Deuterated Polystyrene macroanions were end capped with a unit of diphenyl ethylene (DPE) before adding tert.butylacrylate (tBuA) monomer. For further details please see our published articles.¹⁻⁵ TRhe obtained polymer transesterified in presence of 2 ethyl hexanol.

**Characterization:**

The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors from Viscotek Co. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used.

Solubility:

Deuterated polystyrene-b-2-ethyl hexylacrylate is soluble in THF, dioxane. Toluene, benzene CHCl₃ It precipitates from methanol/water.

SEC of the product:

Size exclusion chromatography of deuterated (d₈) polystyrene-poly(2EtHA)

- Deuterated Polystyrene, M_n=10000, M_w=10500, PI=1.05
- Block Copolymer dPS(10000)-b-PtBuA(7000), PI=1.15
- After Transesterification of tert butyl ester:
Mn: dPS Mn 10,000-b-2EtHA (10,000) Mw/Mn 1.15

References for further information:

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- 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.
- 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.
- S. K. Varshney, J. P. Hautekeer, R. Fayt, R. Jerome, and Ph.Teyssie *Macromolecules*, 1990, 23, 2618-2622.
- 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.