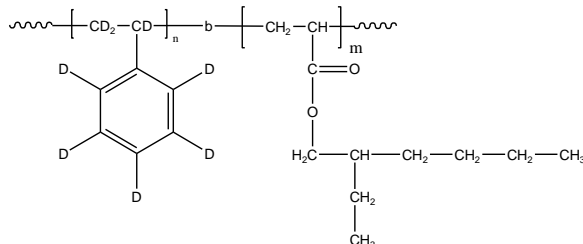


### Sample Name:

**Deuterated polystyrene (d<sub>8</sub>)- poly 2-ethylhexylacrylate(protonated)**

### Sample #: P8185-dPSEtHA

#### Structure:

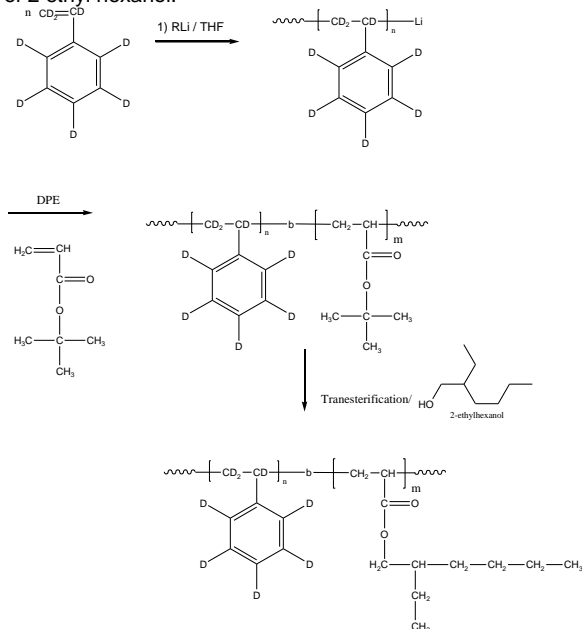


#### Composition:

Mn x 10 <sup>3</sup>	PDI
31.0-b-30.5	1.09

#### Synthesis Procedure:

Deuterated poly(styrene (D<sub>8</sub>)-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.<sup>1-5</sup> The obtained polymer transesterified in presence of 2 ethyl hexanol.



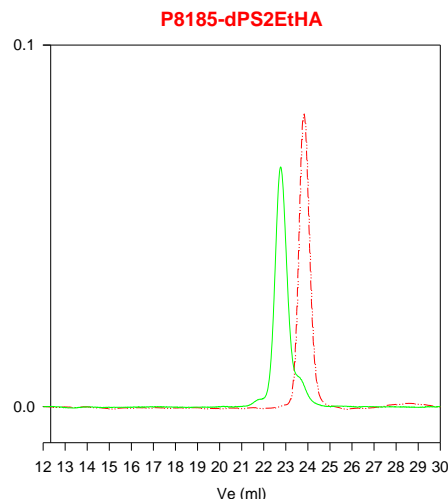
#### Characterization:

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 CHCl<sub>3</sub> It precipitates from methanol/water.

#### SEC of the product:



Size exclusion chromatography of deuterated (d<sub>8</sub>) polystyrene-poly(t-butyl acrylate)

— Deuterated Polystyrene, M<sub>n</sub>=31000, M<sub>w</sub>=32500, PI=1.06  
— Block Copolymer PdSt(31000)-b-2 ethyl hexyl acrylate(30500), PI=1.09  
dn/dc in THF at 35 °C: 0.120ml/g  
Solution viscosity in THF at 35 °C: 0.268dl/g and  
Radius of Gyration in THF at 35 °C: 4.90nm

#### 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, 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.
3. 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.
4. S. K. Varshney, J. P. Hautekeer, R. Fayt, R. Jerome, and Ph.Teyssie *Macromolecules*, 1990, 23, 2618-2622.
5. 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.