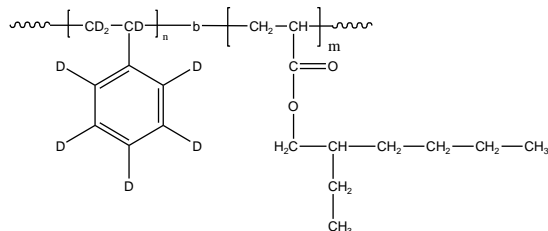


Sample Name:

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

Sample #: P9749A-dPS2EtHA

**Structure:**

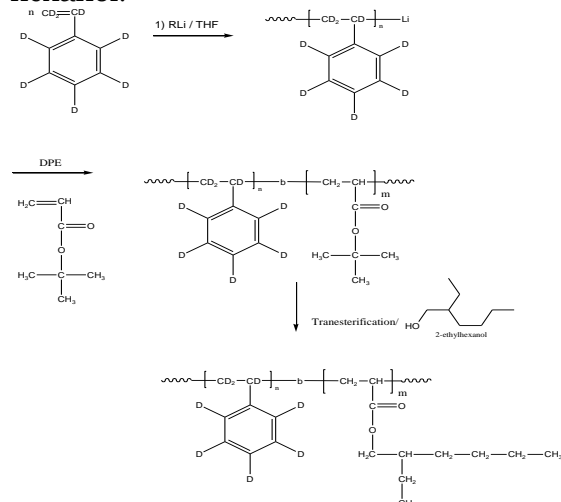


**Composition:**

Mn × 10 <sup>3</sup>	PDI
5.5-b-5.7	1.09
Tg for dPS block: 38°C	2EtHA: Not distinct

**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 consult our publication.<sup>1-5</sup> TRhe obtained polymer transterified in presence of 2 ethyl hexanol.



**Characterization:**

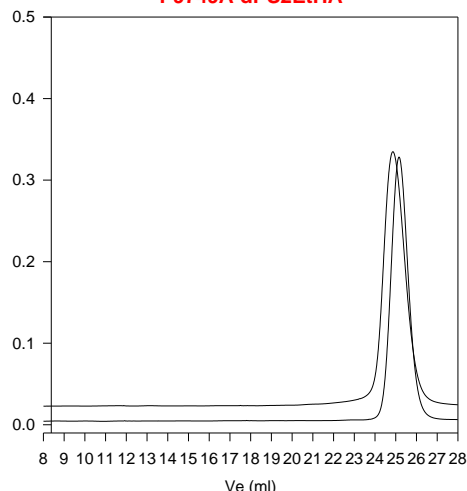
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors from Viscotek Co. Three SEC columns from Supelco (G6000-4000-2000 HXL)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

Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T<sub>g</sub>) has been considered.

**Solubility:** Deuterated polystyrene-b-2-ethyl hexylacrylate is soluble in THF, dioxane, toluene, benzene and CHCl<sub>3</sub>. It precipitates from methanol/water.

**SEC of the product:**

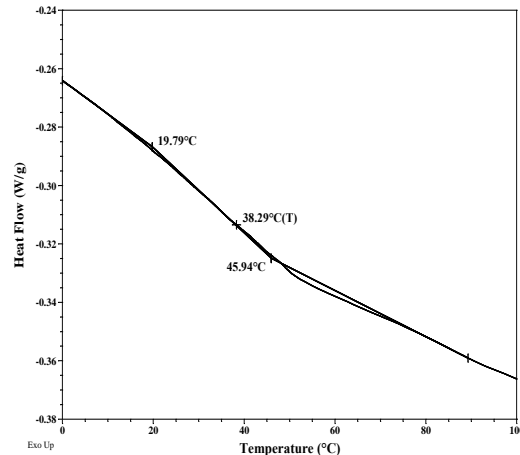
P9749A-dPS2EtHA



Size exclusion chromatography of deuterated (d<sub>8</sub>) polystyrene-poly(2EtHA)

— Deuterated Polystyrene, M<sub>n</sub>=5500, M<sub>w</sub>=5800, PI=1.05  
— Mn: dPS Mn 5,500-b-2EtHA ( 5,700) Mw/Mn 1.09

**Thermogram for dPS block:**



**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.