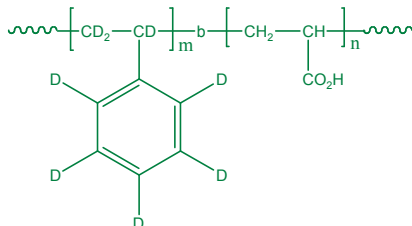


Sample Name:

Deuterated polystyrene (d₈)- polyacrylic acid (protonated)

Sample #: P9446A-dPSAA**Structure:****Composition:**

Mn x 10 ³ (dPS-b-AA)	PDI
15.0-b-5.0	1.15
T _g for dPS block	Not distinct
T _g for PAA block	131°C

Synthesis Procedure:

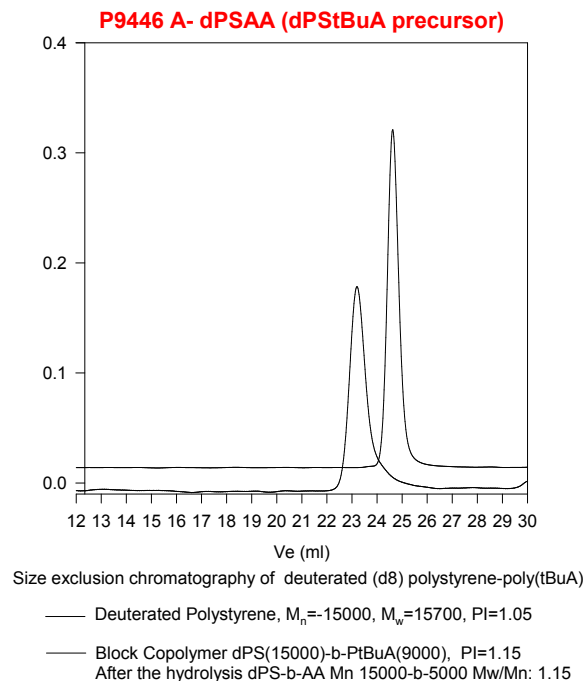
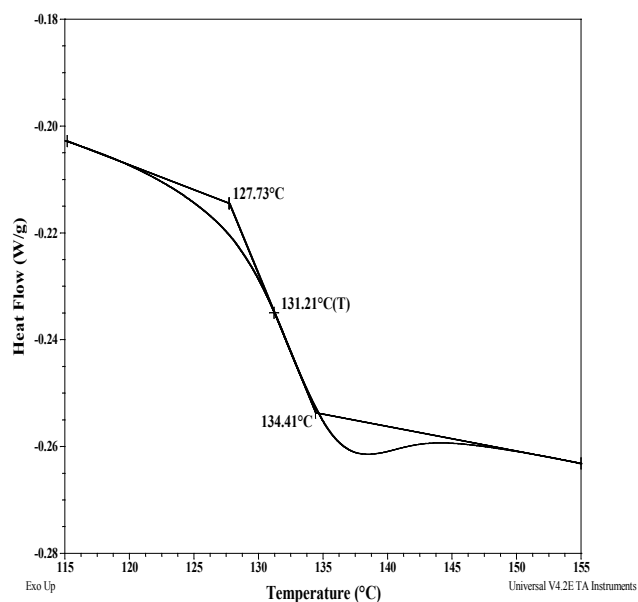
Deuterated poly(styrene (D₈)-b-t-butyl acrylate) is prepared by living anionic polymerization in THF at -78 °C using sec.BuLi initiator in the presence of LiCl. Deuterated Polystyrene macroanions were end capped with a unit of diphenyl ethylene (DPE) before adding tert.butylacrylate (tBuA) monomer. For further details please see our published articles.¹⁻⁵ The t-butyl ester form was converted to acid form by hydrolysis in dioxane.

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-AA is soluble in DMF, THF and may solubilize in CHCl₃ dependent on the composition (with a few units of acrylic acid block). It precipitates from hexanes.

SEC of the sample:**DSC thermogram for the sample:****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.