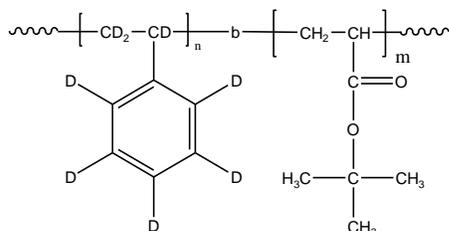


**Sample Name:**

**Deuterated polystyrene (d<sub>8</sub>)- poly  
tert.butylacrylate(protonated)**

**Sample #: P895-dPS<sub>t</sub>BuA****Structure:****Composition:**

M <sub>n</sub> x 10 <sup>3</sup>	PDI
5.5-b-73.3	1.17
T <sub>g</sub> for dPS block	Not distinct
T <sub>g</sub> for tBuA block	45°C

**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>

**Characterization:**

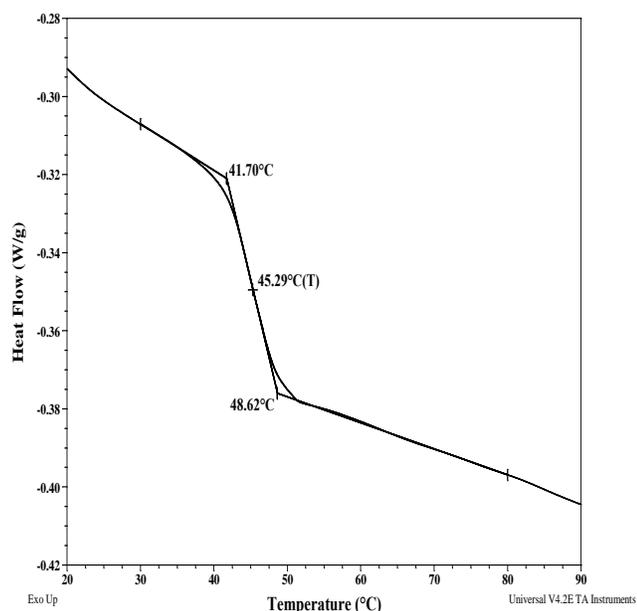
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors from Viscotek Co. Three SEC columns from Supelco (G6000-4000-2000 HXL)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

**Thermal analysis**

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T<sub>g</sub>).

**Solubility:**

Deuterated polystyrene-b-tert.butylacrylate is soluble in THF, dioxane. Toluene, benzene CHCl<sub>3</sub> It precipitates from methanol/water.

**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.
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.