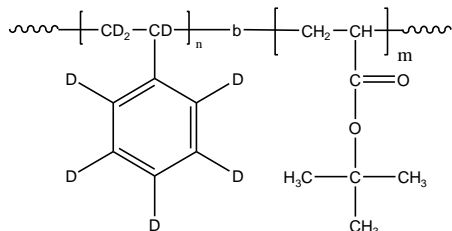


**Sample Name:**

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

Sample #: P8175-dPStBuA

**Structure:****Composition:**

Mn x 10 <sup>3</sup>	PDI
27.0-b-9.0	1.07
T <sub>g</sub> for dPS block	102°C
T <sub>g</sub> for tBuA block	43°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.<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**

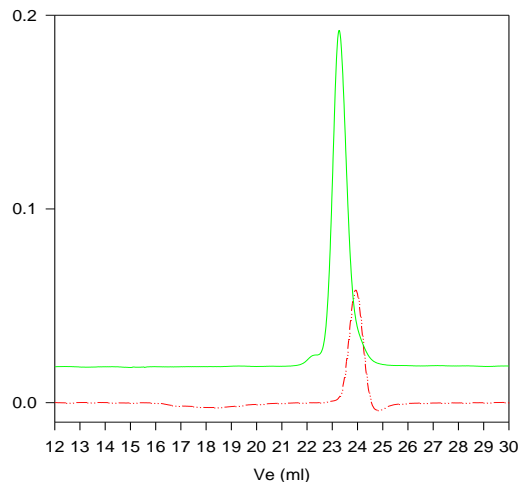
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T<sub>g</sub>).

**Solubility:**

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

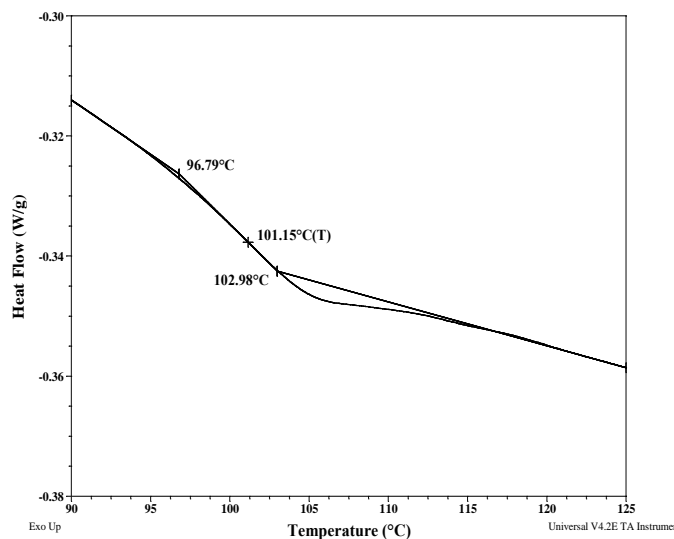
**SEC of the product:**

P8175-dPStBA



Size exclusion chromatography of deuterated (d8) polystyrene-poly(t-butyl acrylate)

--- Deuterated Polystyrene, M<sub>n</sub>=27000, M<sub>w</sub>=28500, PI=1.06  
— Block Copolymer PdSt(27000)-b-PtBuA(9000), PI=1.07

**DSC thermogram for the sample:****Thermogram for PtBuA block:**