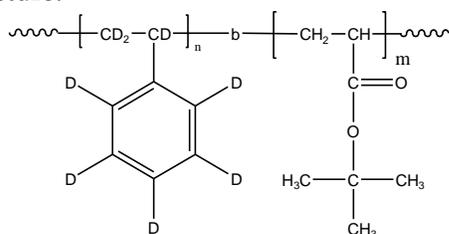


Sample Name:

Deuterated polystyrene (d₈)- poly tert.butylacrylate(protonated)

Sample #: P5993-dPStBuA

Structure:



Composition:

M _n x 10 ³	PDI
52.0-b-20.0	1.2
T _g for dPS block	101°C
T _g for tBuA block	47°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.¹⁻³

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

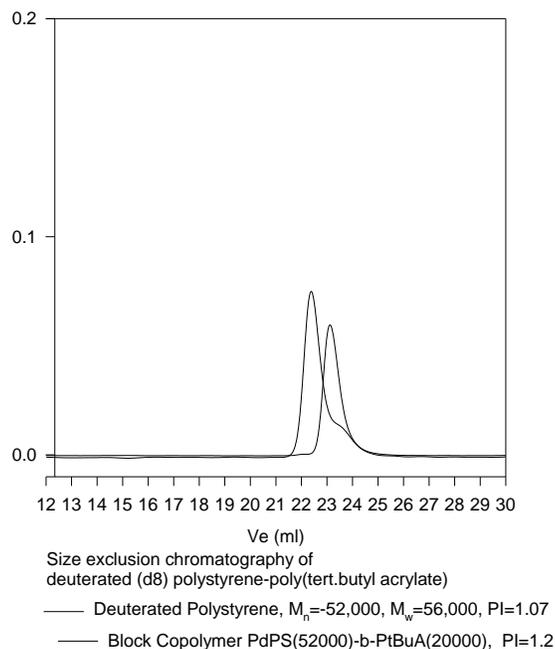
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:

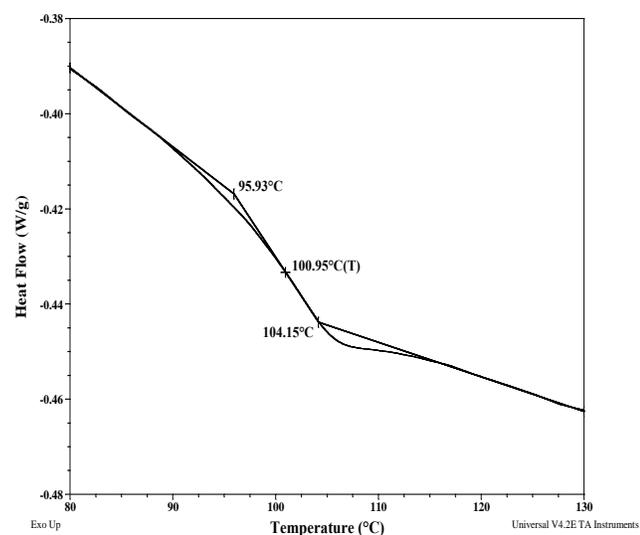
Deuterated polystyrene-b-tert.butylacrylate is soluble in THF, dioxane. Toluene, benzene and CHCl₃. It precipitates out from methanol/water.

SEC of the product:

P5993-dPStBuA



DSC thermogram for dPS block:



DSC thermogram for PtBuA block;

