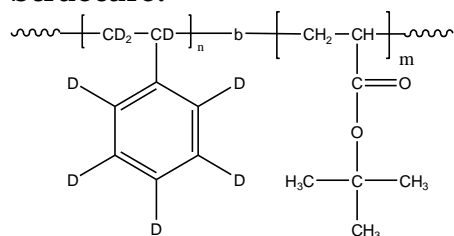


Sample Name:

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

Sample #: P9749-dPStBuA**Structure:****Composition:**

Mn x 10 ³	PDI
5.5-b-4.0	1.12
T _g for dPS block	80 °C
T _g for tBuA block	39 °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

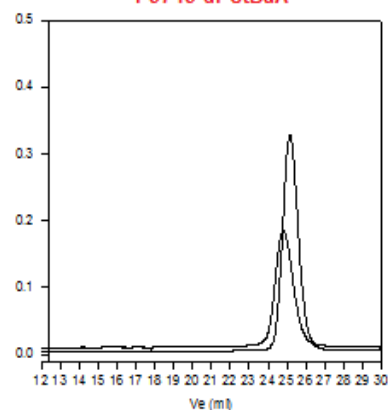
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:

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

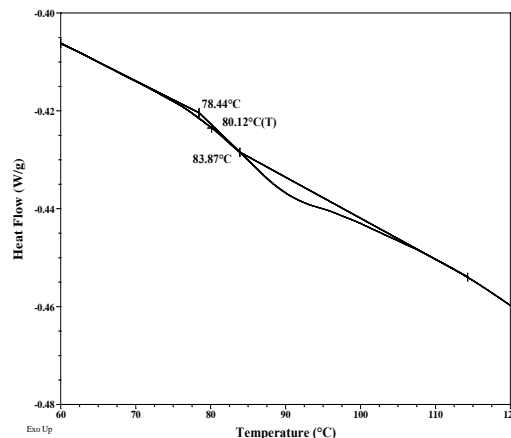
SEC of the product:

P9749-dPStBuA



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

— Deuterated Polystyrene, M_n ~5500, M_w ~6800, PI=1.06
 — Block Copolymer P9749-dPSt(5500)-b-PtBuA(4000), PI=1.12

DSC thermogram for dPS block:**DSC thermogram for PtBuA block;**