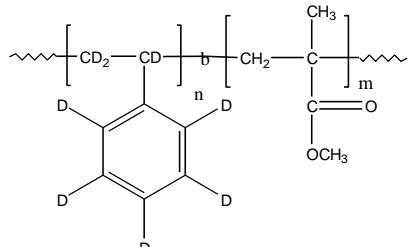


Sample Name:

Deuterated Polystyrene (d_8)-Methyl methacrylate (protonated)

Sample #: P1715-dPSMMA

Structure:**Composition:**

Mn x 10 ³ (dPS-b-MMA)	PDI
29.5-b-32.5	1.09
T _g for PS block	107°C
T _g for MMA block	132°C

Synthesis Procedure:

Deuterated poly(styrene (D_8)-b-methyl methacrylate) 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 methylmethacrylate (MMA) monomer. For further details please see our published articles.¹⁻⁵

Characterization:

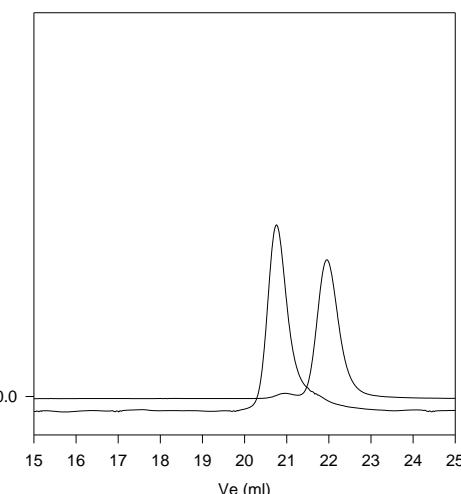
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors from Viscotek Co. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used. Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 15°C/min. The inflection glass transition temperature (T_g) of the sample has been considered.

Solubility:

Deuterated polystyrene- d_8 MMA is soluble in DMF, THF, toluene and CHCl₃. It precipitates from methanol, ethanol, water and hexanes.

SEC elugram of the block polymer:

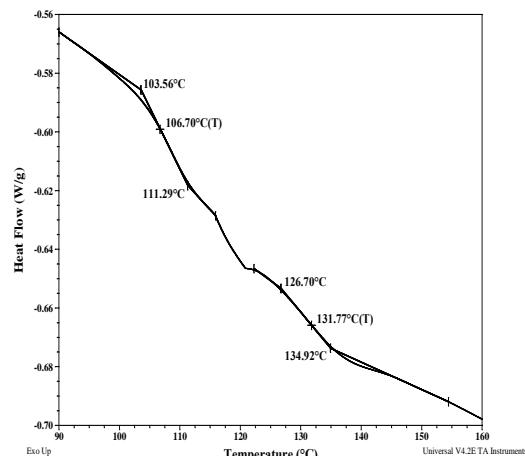
P1715-dPSMMA



Size exclusion chromatography of deuterated polystyrene-b-poly(methyl methacrylate)

— Deuterated (d8)polystyrene, M_n=29500, M_w=31500, PI=1.07

— Block Copolymer dPS(29500)-b-PMMA(32500), PI=1.09

DSC thermogram for the block polymer:**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.
4. S. K. Varshney, J. P. Hautekeer, R. Fayt, R. Jerome, and Ph. Teyssie *Macromolecules*, 1990, 23, 2618-2622.
5. R. Jerome, R. Forte, S. K. Varshney, R. Fayt, and Ph. Teyssie "The Anionic Polymerization of Alkylacrylates:A Challenge" in the Recent Advances in Mechanistic and Synthetic Aspects of Polymerization: M. Fontanaille and A. Guyot Ed., NATO ASI Series C 215, 101 (1987), CA Vol. 108, 12, 094992.