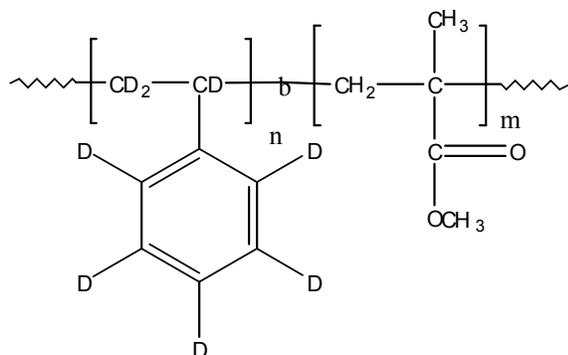


SEC of the polymer:
P10593-dPSMMA

Sample Name:
Deuterated Polystyrene (d₈)-
Methylmethacrylate (protonated)

Sample #: P10593-dPSMMA

Structure:



Composition:

Mn x 10 ³ (dPS-b-MMA)	PDI
130.0-b-128.0	1.15
T _g for PS block	106°C
T _g for MMA block	130°C

Synthesis Procedure:

Deuterated poly[styrene (D₈)-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 methyl methacrylate (MMA) monomer. For further details please consult our publications.¹⁻⁵

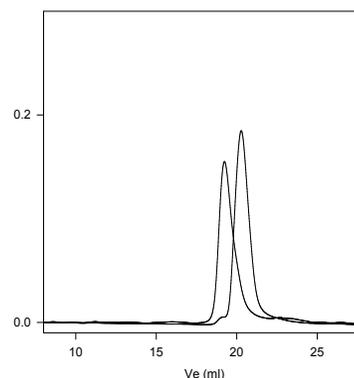
Characterization:

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 10°C/min. The inflection glass transition temperature (T_g) of the sample has been considered.

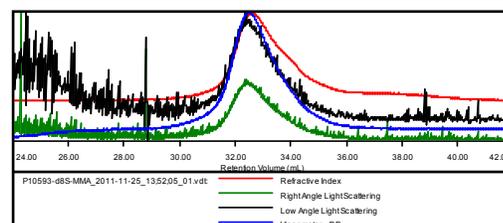
Solubility:

Deuterated polystyrene-d₈MMA is soluble in DMF, THF, toluene and CHCl₃. It precipitates from methanol, ethanol, water and hexanes.

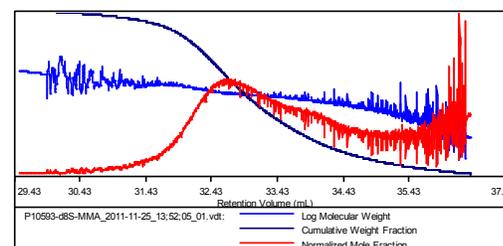


Size exclusion chromatography of deuterated polystyrene-b-poly(methyl methacrylate)
 — Deuterated (d₈)polystyrene, M_n=130,000, M_w=141,500, PI=1.09
 — Block Copolymer dPS(130,000)-b-PMMA(128,000), PI=1.15
Sample ID: P10593-d8S-MMA

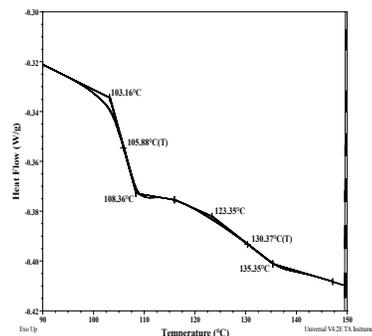
Concentration (mg/mL)	1.7900
Sample dn/dc (mL/g)	0.1409
Method File	PS80K-Oct-0000.vcm
Column Set	3xPL 1113-6300
System	System 1



Sample	Mn (Da)	Mw (Da)	Mp (Da)	Mw/Mn	IV (dL/g)
P10593-d8S-MMA_2011-11-25_13:52:05_01	256,982	315,125	337,143	1.226	1.4310



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.

