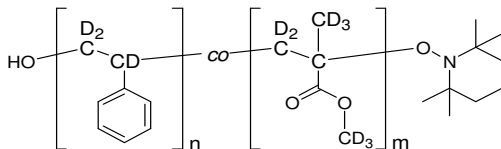


**Sample:** Deuterated Poly(Styrene-*co*-Methyl Methacrylate),  $\alpha$ -Hydroxy,  $\omega$ -TEMPO-moiety terminated random copolymer

**Sample #** P19336-dPSMMAranOHT

**Structure:**



**Composition:**

$M_n \times 10^3$ (g/mol)	$M_w/M_n$ (PDI)
9.0	1.11

Polystyrene content: 43 mol %

**Synthesis:**

Hydroxy-terminated poly(styrene-*co*-methyl methacrylate) was prepared by stable free radical polymerization at 135°C using deuterated monomers d8styrene and d8 MMA.

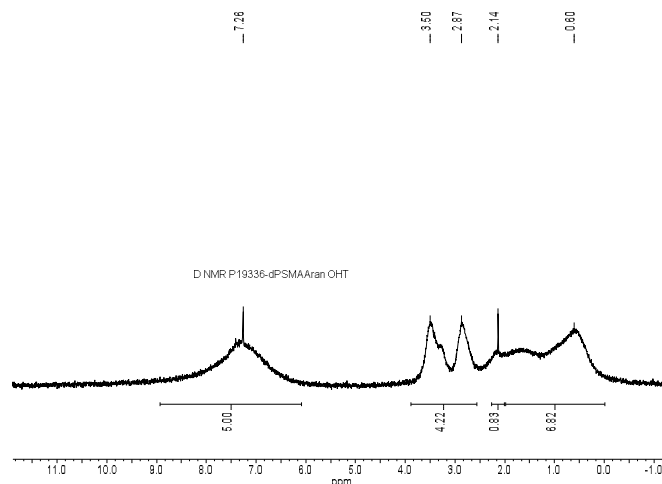
**Characterization:**

The molecular weight and polydispersity index (PDI) of the product was determined by size exclusion chromatography (SEC), using polystyrene as a standard. The ratio between polystyrene and poly(methyl methacrylate) in PS-PMMA copolymer was calculated from  $^1\text{H}$  NMR spectroscopy by comparing the peak area of the PS phenyl protons at 6.5–7.3 ppm and the peak area of PMMA methyl protons at 2.6–3.6 ppm.

**Solubility:**

Polymer is soluble in THF, DMF, toluene, and chloroform. It precipitates from methanol and hexanes.

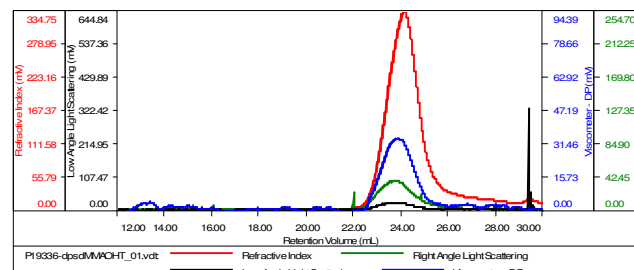
**$^2\text{H}$  NMR spectrum of the copolymer in  $\text{CDCl}_3$ :**



**SEC elugram of the copolymer:**

Sample ID-P19336-dPSMMAranOHT

Concentration (mg/mL)	1.2482
Sample dn/dc (mL/g)	0.1600
Method File	PS80K-Nov-2015-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P19336-dPSMMAranOHT_01.vcl	9,023	10,042	7,892	1.113	1.2740