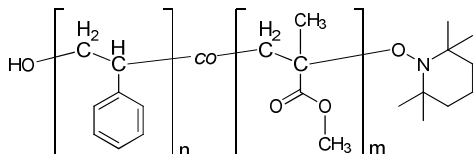


Sample: Poly(Styrene-*co*-Methyl Methacrylate), α -Hydroxy, ω -TEMPO-moiety terminated random copolymer

Sample # P20253C-SMMAranOHT

Structure:

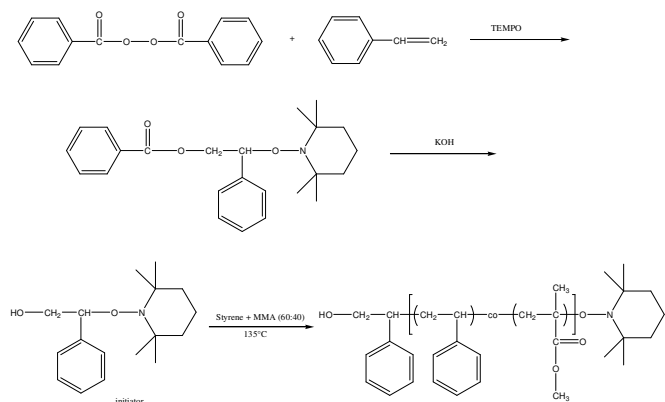


Composition:

$M_n \times 10^3$ (g/mol)	M_w/M_n (PDI)
7.8	1.58
Polystyrene content: 55 mol %	

Synthesis:

Hydroxy-terminated poly(styrene-*co*-methyl methacrylate) was prepared by stable free radical polymerization at 135°C. The reaction scheme is shown below:



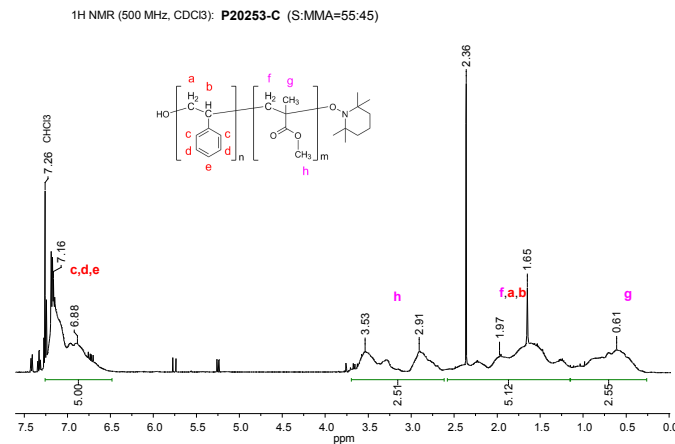
Characterization:

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 ^1H 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:

Poly(styrene-*co*-methyl methacrylate) is soluble in THF, DMF, toluene, and chloroform. It precipitates from methanol and hexanes.

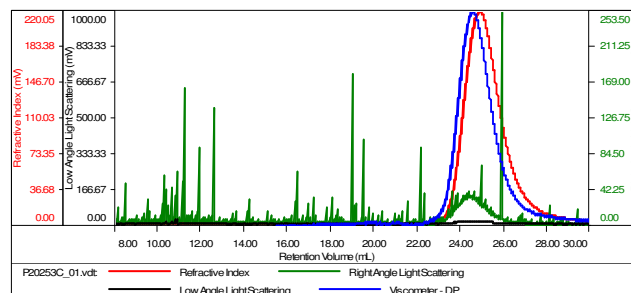
^1H NMR spectrum of the copolymer in CDCl_3 :



SEC elugram of the copolymer:

Sample ID: P20253C-SMMAranOHT

Concentration (mg/mL)	3.2527
Sample dn/dc (mL/g)	0.1300
Method File	PS80K-June30-2015-0000.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)
P20253C_01.vcl	7,852	12,438	12,080	1.584	0.5611