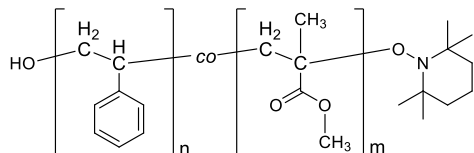


Sample: Poly(Styrene-*co*-Methyl Methacrylate), α -Hydroxy, ω -TEMPO-moiety terminated random copolymer

Sample # P60600C-SMMAranOHT

Structure:



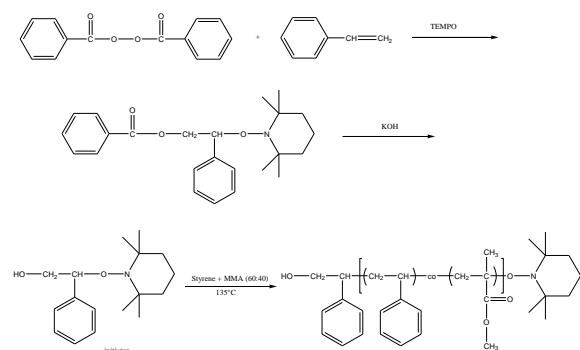
Composition:

$M_n \times 10^3$ (g/mol)	M_w/M_n (PDI)
42.0	1.24

Polystyrene content: 82%

Synthesis:

α -Hydroxy, ω -TEMPO-terminated poly(styrene-*co*-methyl methacrylate) was prepared by nitroxide-mediated radical polymerization at 135°C. The reaction scheme is shown below:



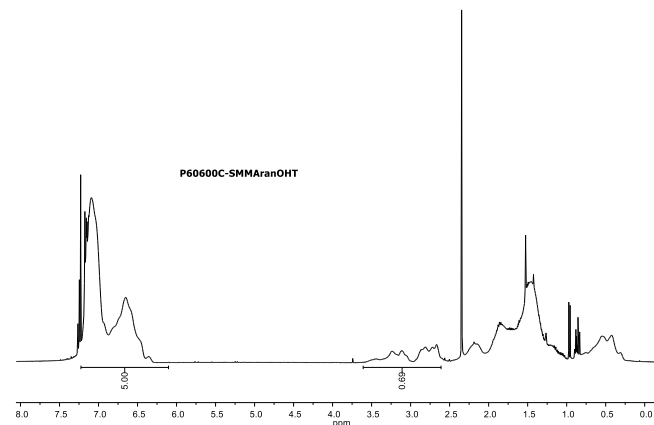
Characterization:

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.

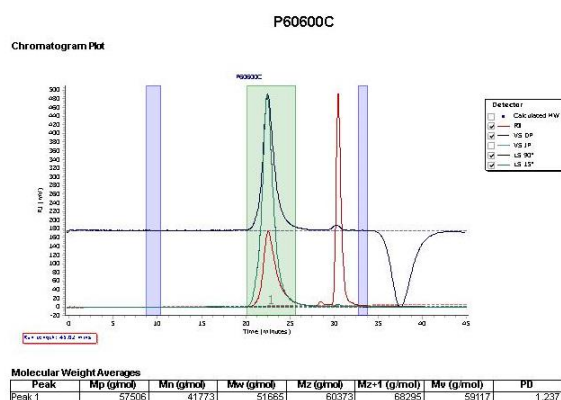
Solubility:

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:



Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mw (g/mol)	PDI
Peak 1	57506	41773	51665	60373	68295	59117	1.237