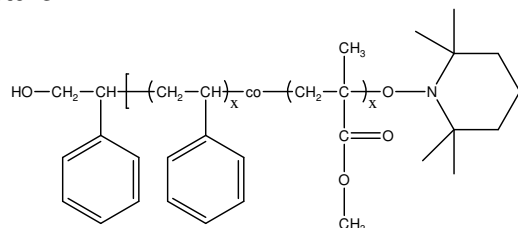


Sample: Poly(Styrene-*co*-Methyl Methacrylate),
 α -Hydroxy, ω -TEMPO-moiety terminated random copolymer

Sample # P6469A-SMMAranOHT

Structure:



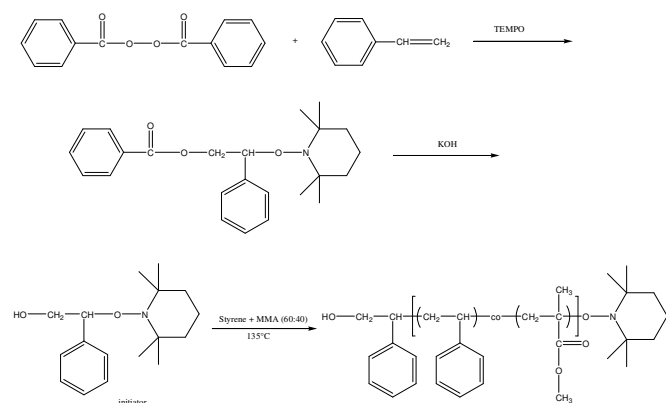
Composition:

$M_n \times 10^3$ (g/mol)	M_w/M_n (PDI)
7.0	1.48

Polystyrene content: 56 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:



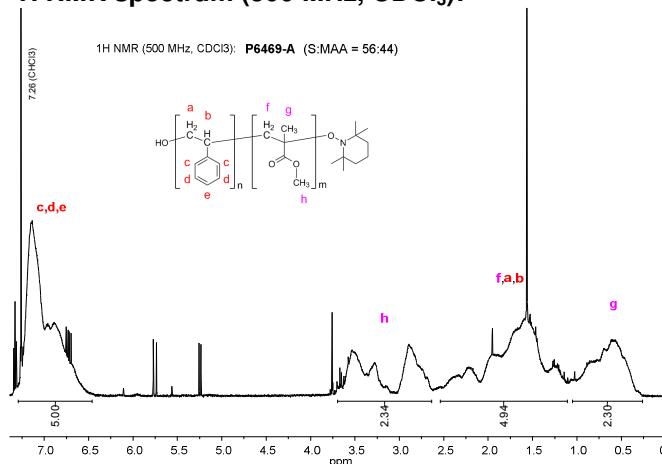
Characterization:

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:

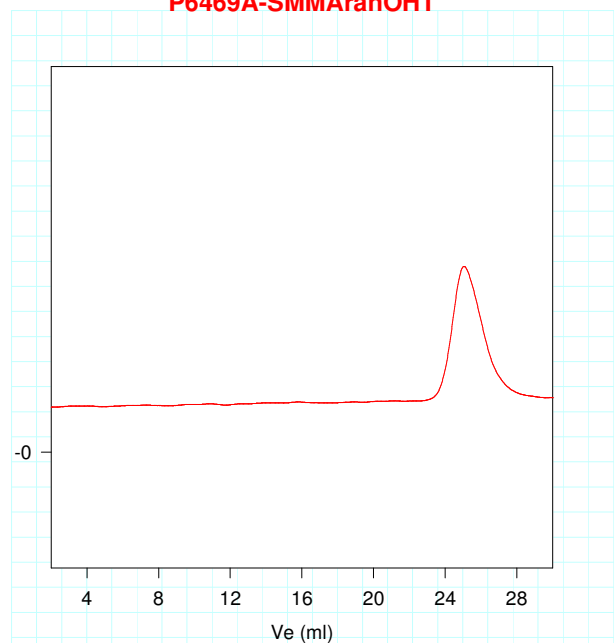
Poly(styrene-*co*-methyl methacrylate) is soluble in THF, DMF, toluene, and chloroform. It precipitates from methanol and hexanes.

^1H NMR spectrum (500 MHz, CDCl_3):



SEC elugram of the copolymer:

P6469A-SMMAranOHT



Size exclusion chromatograph of random copolymer: poly(styrene-*co*-MMA):

$M_n=7000$, $M_w=10400$, $M_w/M_n=1.48$