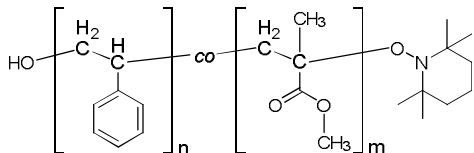


Sample: Poly(Styrene-*co*-Methyl Methacrylate), α -Hydroxy, ω -TEMPO-moiety terminated random copolymer

Sample # P20293-SMMAranOHT

Structure:



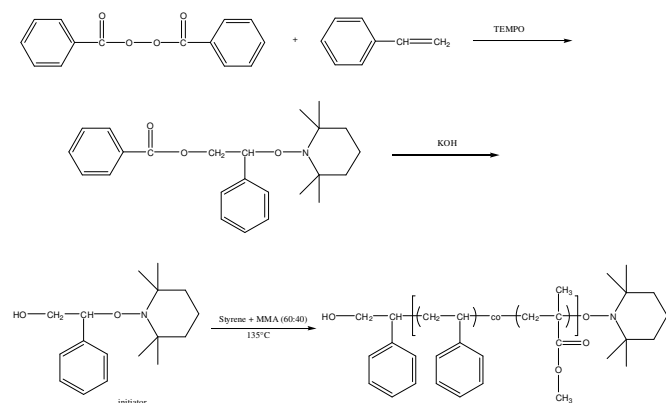
Composition:

$M_n \times 10^3$ (g/mol)	M_w/M_n (PDI)
27.5	1.1

Polystyrene content: 85 mol %

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:



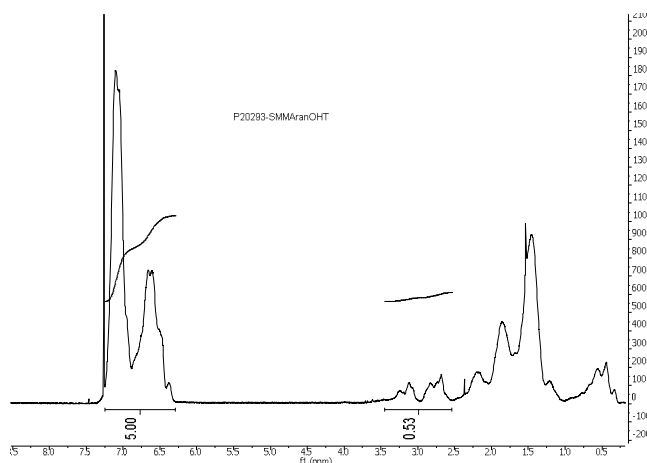
Characterization:

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.

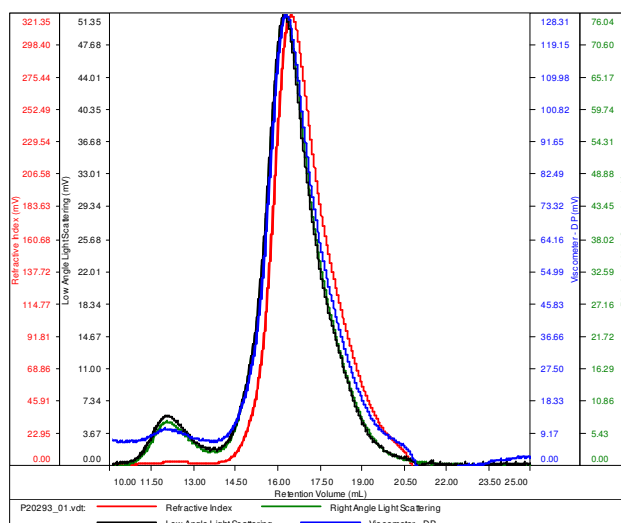
^1H NMR spectrum of the copolymer in CDCl_3 :



SEC of the copolymer:

SAMPLE ID: P20293-SMMAranOHT

Conc (mg/mL)	17.7828
dn/dc (mL/g)	0.1500
Method	ps80k-21Jan2016-DMF-0000.vcm
Solvent	DMF w 0.023M LiBr
Column	PSS



Sample	M_n	M_w	M_p	M_w/M_n	IV
P20293_01.vdt	27,499	30,120	29,793	1.095	0.1770