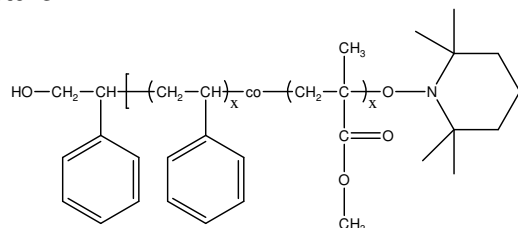


Sample: Poly(Styrene-co-Methyl Methacrylate), α -Hydroxy, ω -TEMPO-moiety terminated random copolymer

Sample # P20201-SMMAranOHT

Structure:



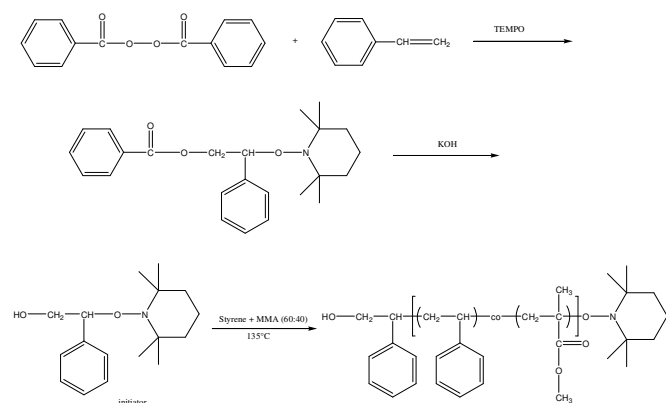
Composition:

$M_n \times 10^3$ (g/mol)	M_w/M_n (PDI)
7.4	1.5

Polystyrene content: 52 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:



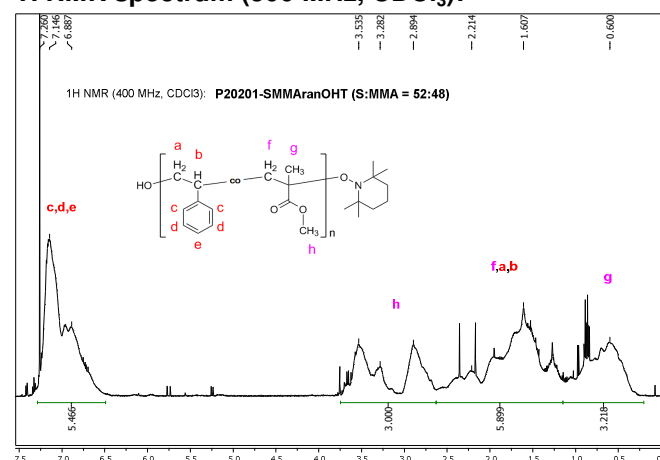
Characterization:

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 3–3.6 ppm.

Solubility:

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

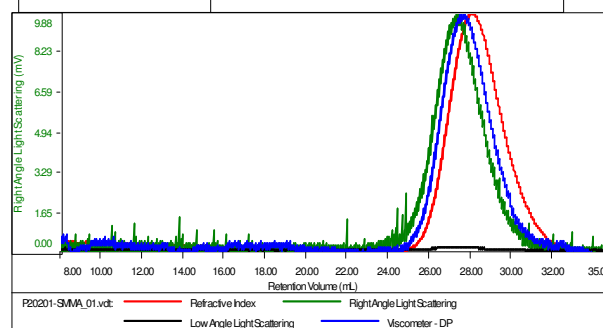
^1H NMR spectrum (500 MHz, CDCl_3):



SEC elugram of the copolymer:

Sample ID: P20201-SMMAran OHT

Concentration (mg/mL)	7.2433
Sample divic (mL/g)	0.1600
Method File	PS80K-March6-2015-0000.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)
P20201-SMMA_01.vdt	7,368	11,027	9,638	1.496	0.0947