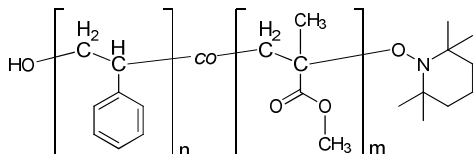


**Sample: Poly(Styrene-*co*-Methyl Methacrylate),  $\alpha$ -Hydroxy,  $\omega$ -TEMPO-moiety terminated random copolymer**

**Sample # P20252F-SMMAranOHT**

**Structure:**

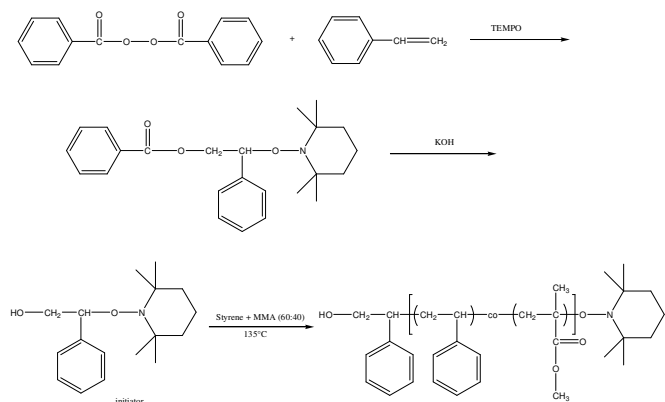


**Composition:**

$M_n \times 10^3$ (g/mol)	$M_w/M_n$ (PDI)
22.5	1.33
Polystyrene content: 60 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:



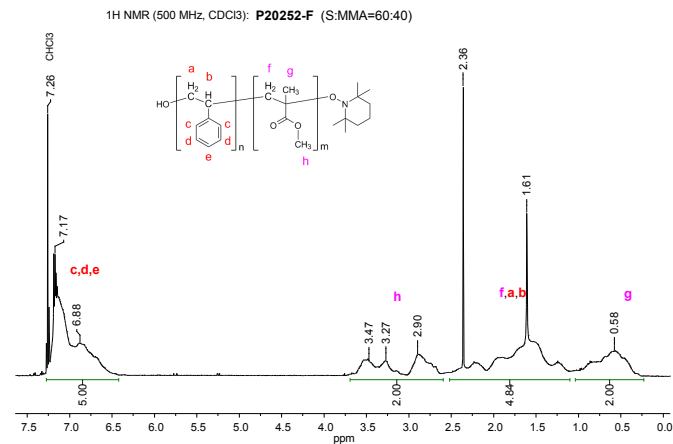
**Characterization:**

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  $^1\text{H}$  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.

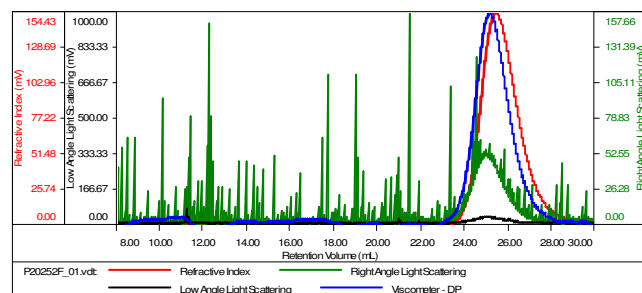
**$^1\text{H}$  NMR spectrum of the copolymer in  $\text{CDCl}_3$ :**



**SEC elugram of the copolymer:**

**Sample ID: P20252F-SMMAranOHT**

Concentration (mg/mL)	2.2333
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)
P20252F_01.vcl	22,506	29,964	28,435	1.331	0.8603