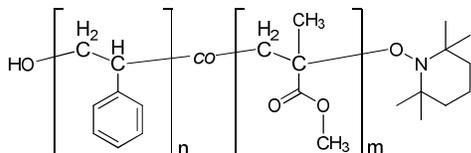


**Sample: Poly(Styrene-co-Methyl Methacrylate),  $\alpha$ -Hydroxy,  $\omega$ -TEMPO-moiety terminated random copolymer**

**Sample # P20256C-SMMAranOHT**

**Structure:**



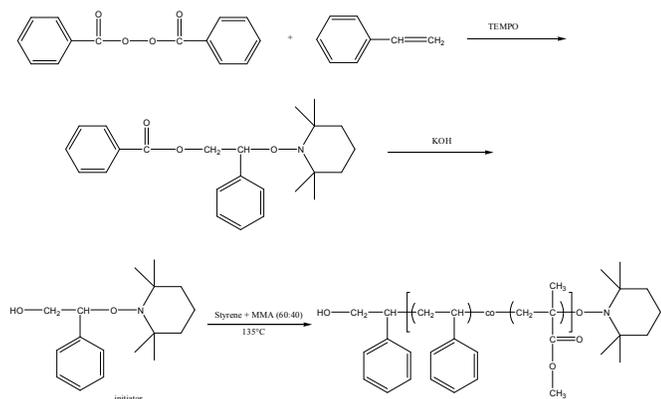
**Composition:**

$M_n \times 10^3$ (g/mol)	$M_w/M_n$ (PDI)
35.0	1.38

Polystyrene content: 85 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:



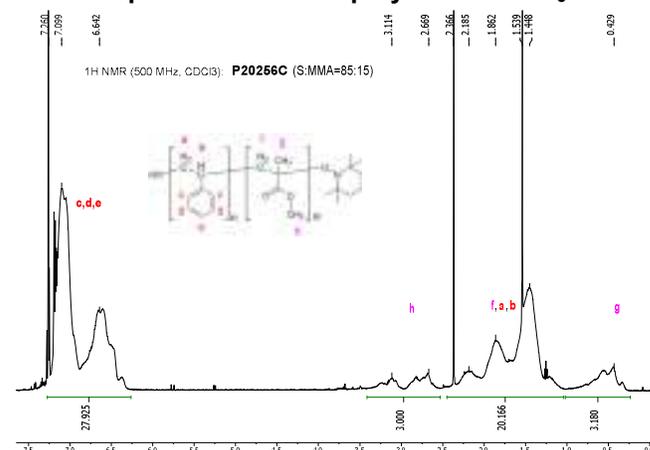
**Characterization:**

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 <sup>1</sup>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.

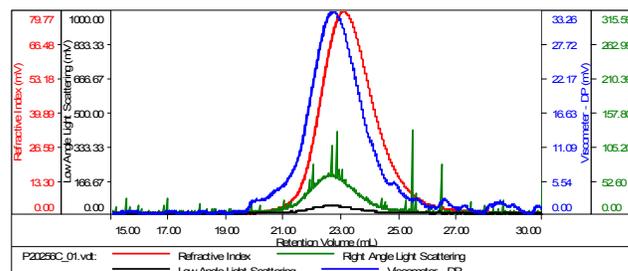
**<sup>1</sup>H NMR spectrum of the copolymer in CDCl<sub>3</sub>:**



**SEC elugram of the copolymer:**

Sample ID: P20256C-SMMAranOHT

Concentration (mg/mL)	0.8883
Sample ch/dc (mL/g)	0.1850
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)
P20256C_01.vtl	34,988	48,296	42,079	1.380	1.7274