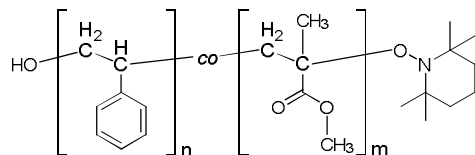


**Sample:** Poly(Styrene-*co*-Methyl Methacrylate),  $\alpha$ -Hydroxy,  $\omega$ -TEMPO-moiety terminated random copolymer

**Sample #** P20291-SMMAranOHT

**Structure:**



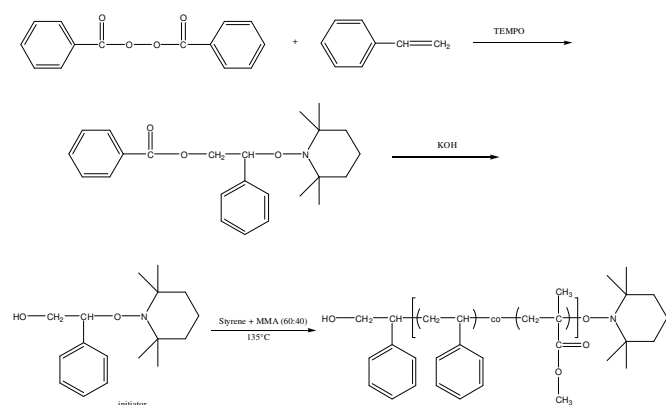
**Composition:**

$M_n \times 10^3$ (g/mol)	$M_w/M_n$ (PDI)
9.5	1.5

Polystyrene content: 42 mol %

**Synthesis:**

$\alpha$ -Hydroxy, $\omega$ -TEMPO-terminated poly(styrene-*co*-methyl methacrylate) was prepared by nitroxide-mediated radical polymerization at 135°C. The reaction scheme is shown below:



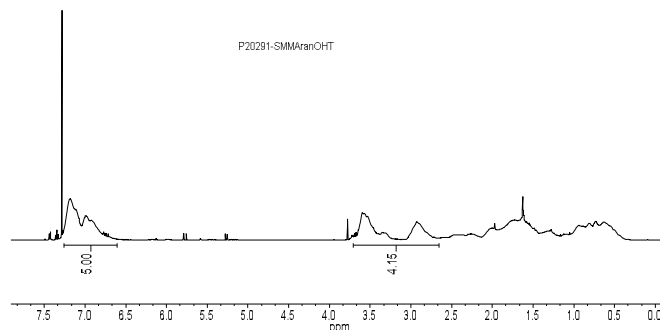
**Characterization:**

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  $^1\text{H}$  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.

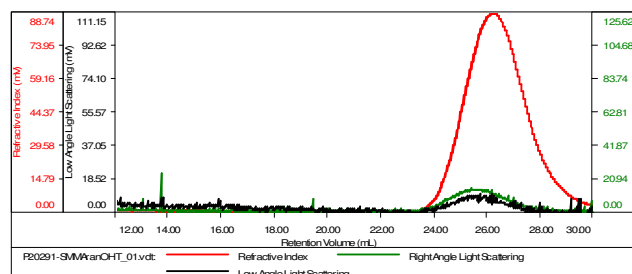
**$^1\text{H}$  NMR spectrum of the copolymer in  $\text{CDCl}_3$ :**



**SEC elugram of the copolymer:**

Sample ID-P20291-SMMAranOHT

Concentration (mg/mL)	2.0251
Sample dn/dc (mL/g)	0.1110
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)
P20291-SMMAranOHT_01.vdt	9,870	15,578	13,988	1.578	1.3890