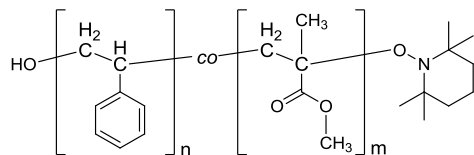


**Sample:** Poly (Styrene-*co*-Methyl Methacrylate),  $\alpha$ -Hydroxy,  $\omega$ -TEMPO-moiety terminated random copolymer

**Sample #:** P18336A-SMMAranOHT

**Structure:**



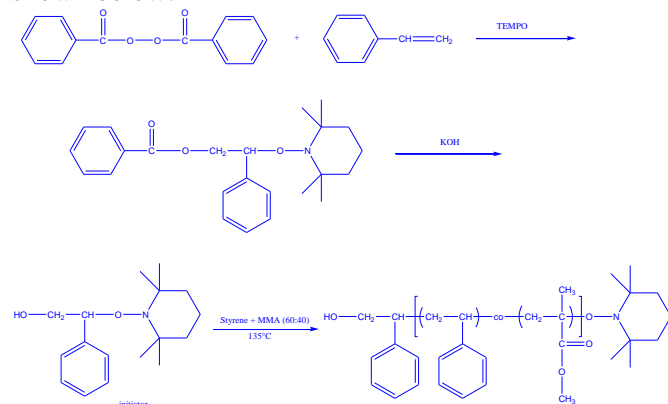
**Composition:**

$M_n \times 10^3$ (g/mol)	$M_w/M_n$ (PDI)
7.0	1.24

$T_g$	81°C
Polystyrene content	52 mol %

**Synthesis Procedure:**

Hydroxy terminated poly(styrene-co-methyl methacrylate) is prepared by controlled free radical polymerization at 135°C. The reaction scheme is shown below:



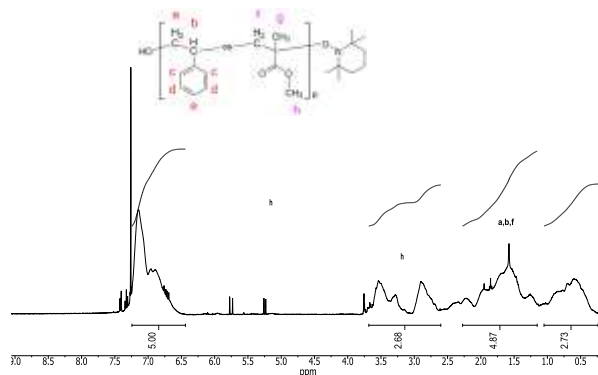
**Characterization:**

An aliquot of the copolymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI), the instrument calibrated by Polystyrene standards. The chemical composition was calculated from  $^1\text{H-NMR}$  spectroscopy by comparing the peak area of the phenyl protons at 6.8-7.4 ppm with the peak area of methyl methacrylate at 2.6-3.6 ppm.

**Solubility:**

Poly(styrene-co-methyl methacrylate) is soluble in THF, DMF, Toluene and chloroform. Precipitate from methanol and Hexanes.

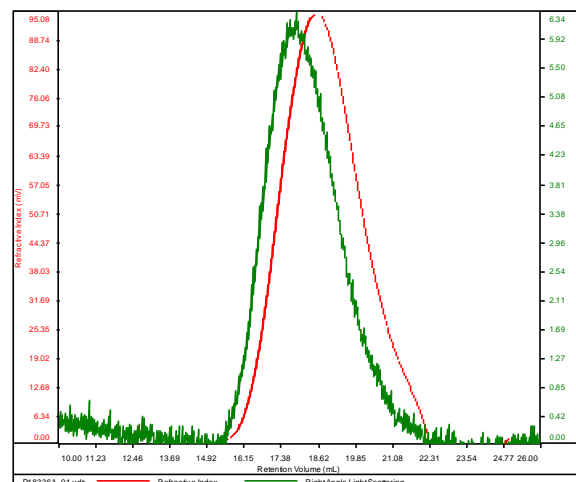
**$^1\text{H NMR}$  spectrum of the product:**



**SEC curve of the product:**

P18336A

Conc	9.6953
dn/dc	0.1300
Solvent	DMF w 0.023M LiBr
Flow Rate	0.7000
Method	PS80k_2018-03-09-0000.vcm



Sample	$M_n$	$M_w$	$M_p$	$M_w/M_n$	IV
P18336A_01.vdt	7,017	8,669	8,376	1.235	0.0933

**DSC curve of the product:**

