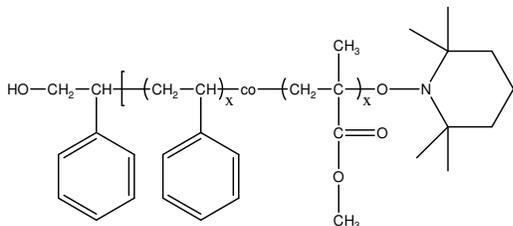


**Sample: Poly(Styrene-co-Methyl Methacrylate),  $\alpha$ -Hydroxy,  $\omega$ -TEMPO-moiety terminated random copolymer**

**Sample # P6469A-SMMAranoHT**

**Structure:**



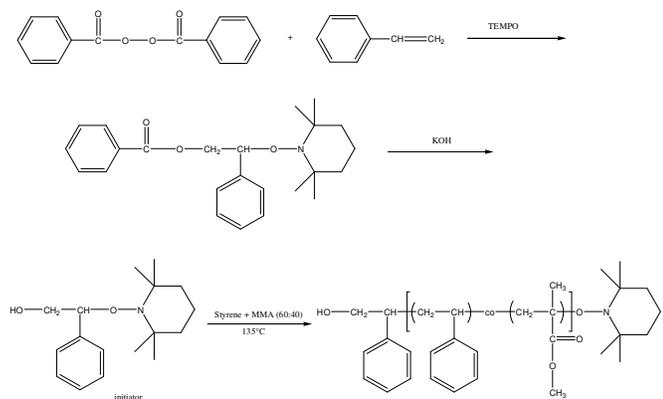
**Composition:**

$M_n \times 10^3$ (g/mol)	$M_w/M_n$ (PDI)
7.0	1.48

Polystyrene content: 56 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:



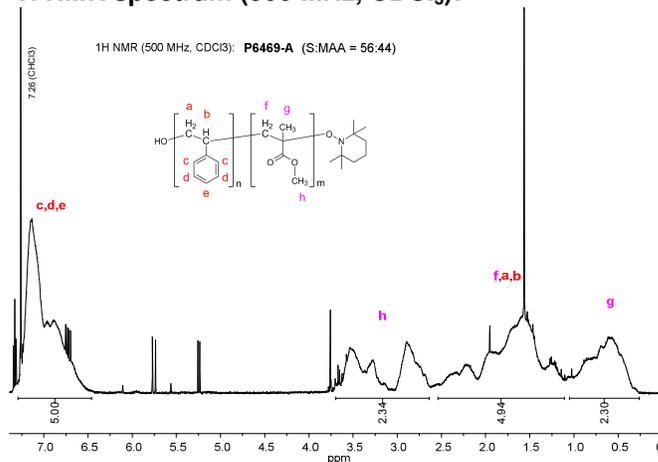
**Characterization:**

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:**

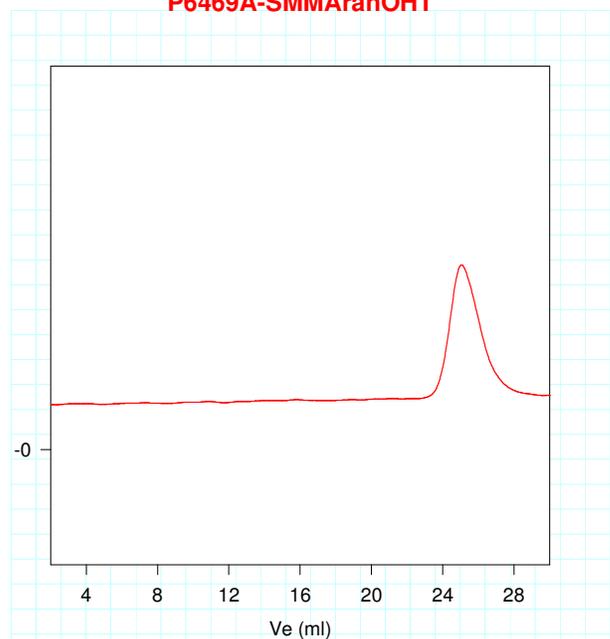
Poly(styrene-co-methyl methacrylate) is soluble in THF, DMF, toluene, and chloroform. It precipitates from methanol and hexanes.

**$^1\text{H}$  NMR spectrum (500 MHz,  $\text{CDCl}_3$ ):**



**SEC elugram of the copolymer:**

**P6469A-SMMAranoHT**



Size exclusion chromatograph of random copolymer: poly(styrene-co-MMA):

$M_n=7000$ ,  $M_w=10400$ ,  $M_w/M_n=1.48$