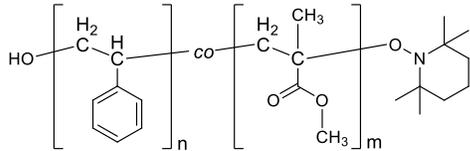


**Sample:** Poly(Styrene-*co*-Methyl Methacrylate),  $\alpha$ -Hydroxy,  $\omega$ -TEMPO-moiety terminated random copolymer

**Sample #** P60604-SMMAranOHT

**Structure:**



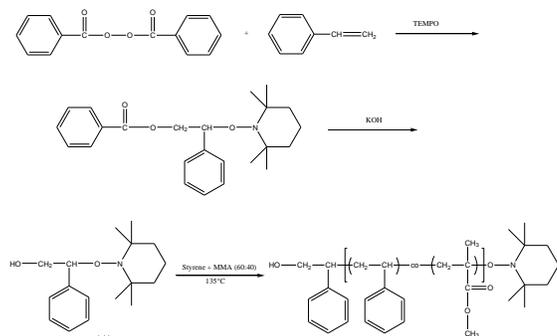
**Composition:**

|                           |                 |
|---------------------------|-----------------|
| $M_n \times 10^3$ (g/mol) | $M_w/M_n$ (PDI) |
| 12.3                      | 1.07            |

Polystyrene content: 85%

**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:



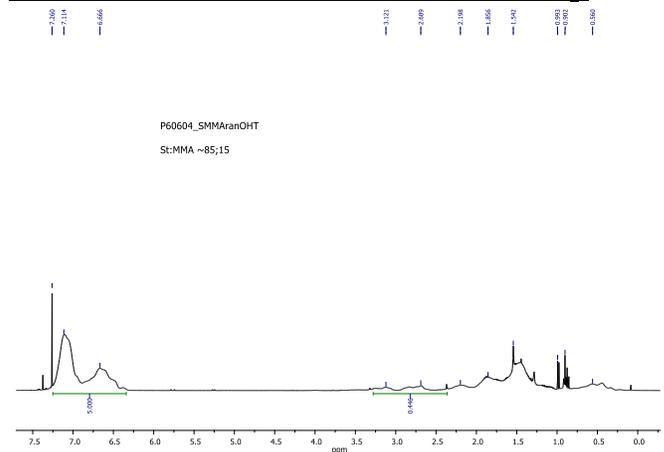
**Characterization:**

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.

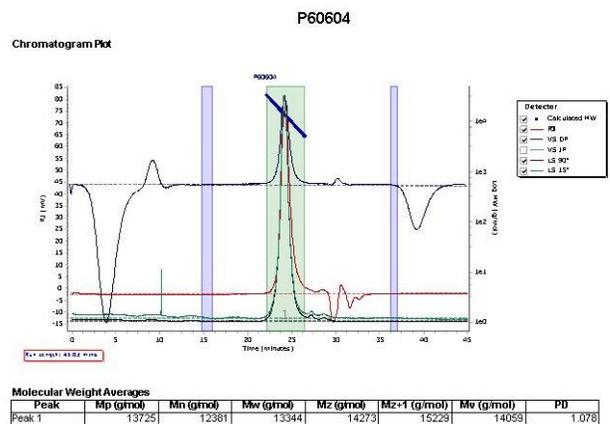
**Solubility:**

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:**



| Peak   | Mp (g/mol) | Mn (g/mol) | Mw (g/mol) | Mz (g/mol) | Mz+1 (g/mol) | Mv (g/mol) | PDI   |
|--------|------------|------------|------------|------------|--------------|------------|-------|
| Peak 1 | 13725      | 12381      | 13344      | 14273      | 15229        | 14059      | 1.078 |