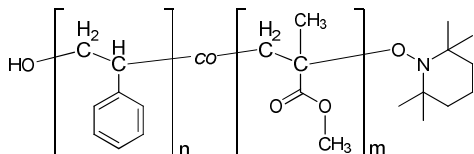


Sample: Poly(Styrene-co-Methyl Methacrylate),
 α -Hydroxy, ω -TEMPO-moiety terminated random copolymer

Sample # P20256E-SMMAranOHT

Structure:



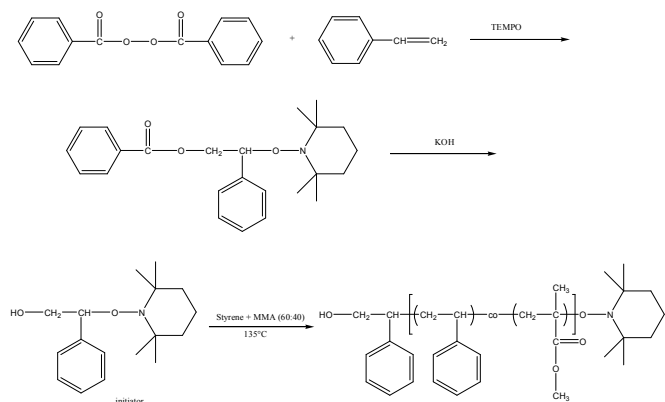
Composition:

| $M_n \times 10^3$ (g/mol) | M_w/M_n (PDI) |
|---------------------------|-----------------|
| 10.0 | 1.8 |

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:



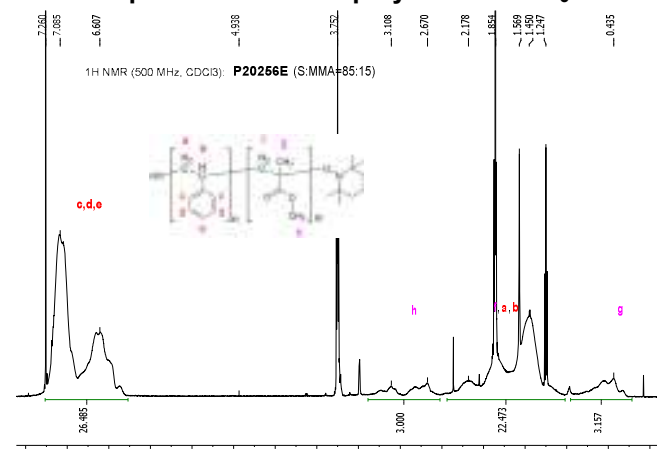
Characterization:

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 ^1H 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.

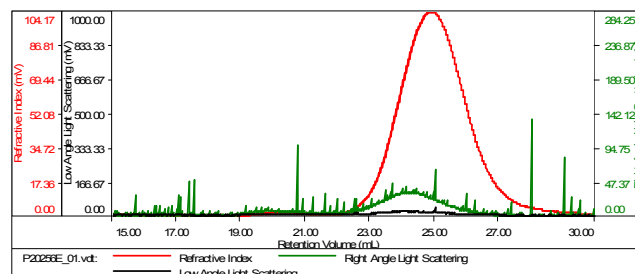
^1H NMR spectrum of the copolymer in CDCl_3 :



SEC elugram of the copolymer:

Sample ID: P20256E-SMMAranOHT

| | |
|-----------------------|----------------------------|
| Concentration (mg/mL) | 1.2635 |
| Sample dn/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) |
|----------------|------------------------|------------------------|-----------------|----------------|----------------------------|
| P20256E_01.vcl | 10,300 | 18,487 | 15,392 | 1.795 | 0.9724 |