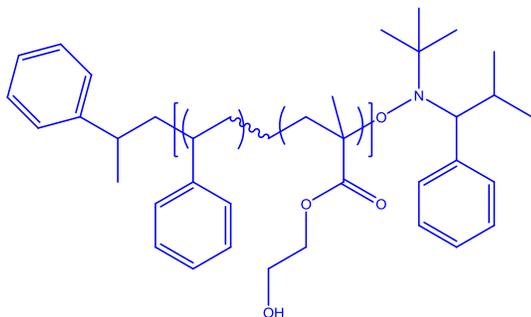


Sample Name:

Random Copolymer Poly(styrene-co-hydroxyethyl methacrylate)

Sample #: P6458-SHEMAran

Structure:



Composition:

PS (wt%) : 61

Mn x 10 ³ PS-co-PHEMA	PDI
25.0	1.31
T _g for the random copolymer	89°C

Synthesis Procedure:

Random Copolymer Poly(styrene-co-hydroxyethyl methacrylate) is prepared by nitroxide mediated radical polymerization of styrene and hydroxyethyl methacrylate .

Characterization:

The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area the aromatic protons at 6.66-7.05 ppm with the protons of hydroxyethyl methacrylate at about 0.8-3.8 ppm that deducts the contribution of the styrene back bone protons.

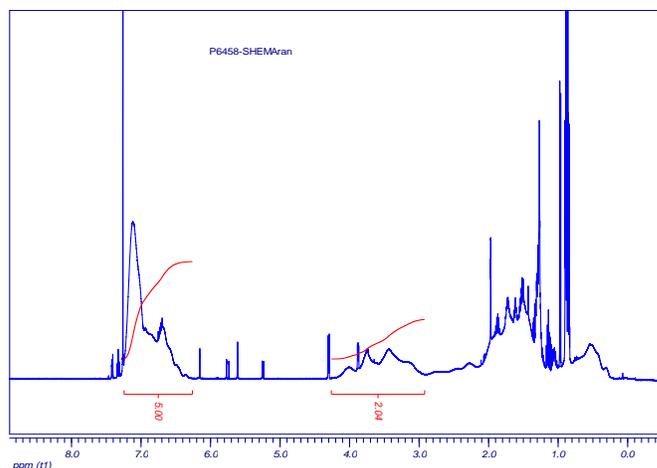
Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 20°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

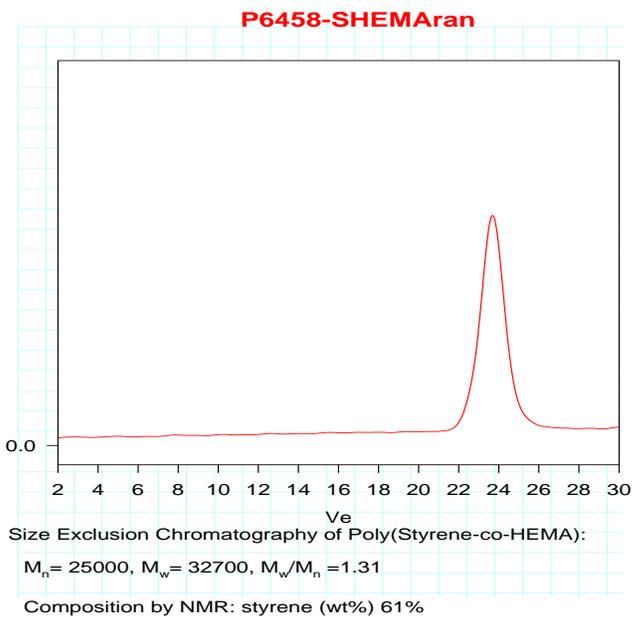
Solubility:

Random Copolymer Poly(styrene-co-hydroxyethyl methacrylate) is soluble in CHCl₃, THF, DMF, toluene and precipitated out from methanol or hexanes dependent on the composition.

¹H-NMR Spectrum of the random copolymer:



SEC of the random copolymer:



DSC thermogram for the sample:

