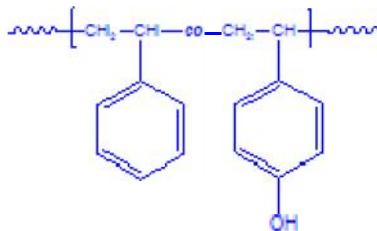


Sample Name:

Random Copolymer poly(styrene-co-4-hydroxy styrene)

Sample #: P10381- S4OHSran

Structure:



Composition:

P4OHS (mol%) : 10%

Mn x 10 ³	PDI
PS-co-P4OHS	
9.8	1.16
T _g for random polymer	103°C

Synthesis Procedure:

Random Copolymer Poly(styrene-co-4-hydroxystyrene) is prepared by radical polymerization of styrene and 4-acetoxy styrene followed by hydrolysis of acetoxy group to OH.

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 of styrene at about 7.05 ppm with the protons of 4-hydroxy styrene at about 3.8 ppm.

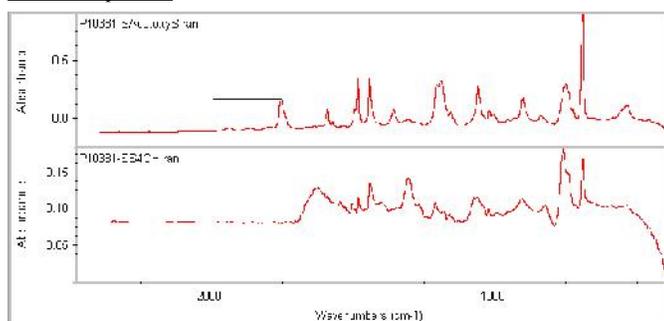
Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°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).

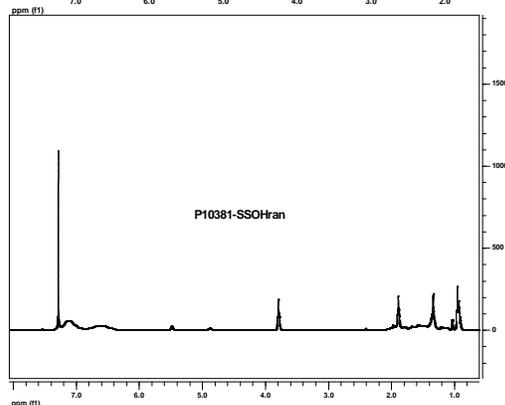
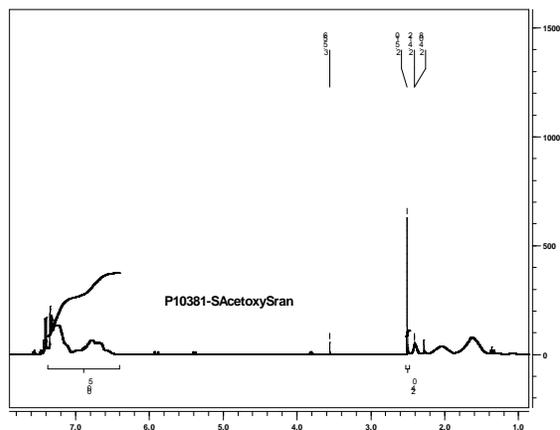
Solubility:

Random Copolymer Poly(styrene-co-4 Hydroxy styrene) is soluble in THF, DMF,

FTIR of the product:

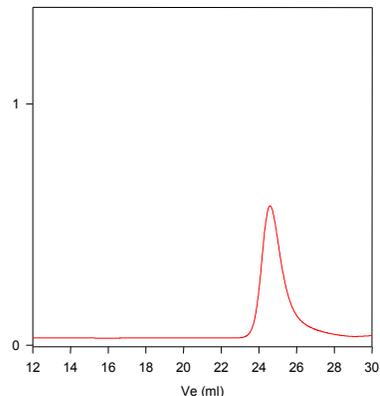


¹H NMR spectrum of the random polymer



SEC for the polymer

P10381-S4OHSran



Size exclusion chromatograph of copolymer of Poly(styrene-co-4-hydroxy styrene)/random copolymer

M_n=10,500, M_w=12,200, PI=1.18

After Hydrolysis of 4 acetoxy group:

Mn 9800 Mw/Mn : 1.16 (Poly 4-hydroxy styrene)= 10%

DSC thermogram for the sample

