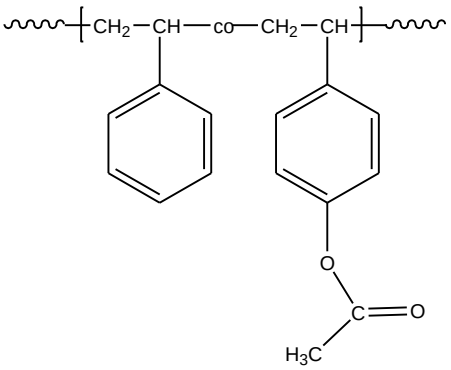
Sample Name:
Random Copolymer poly(styrene-co-4-acetoxy styrene)
Sample #: P10380A- SS4acetoxy ran

Structure:



Composition:
P4acetoxy (mol%) : 10%

Mn x 10^3 PS-co-P4AcetoxyS	PDI
8.0	1.15
T_g for random polymer	103°C

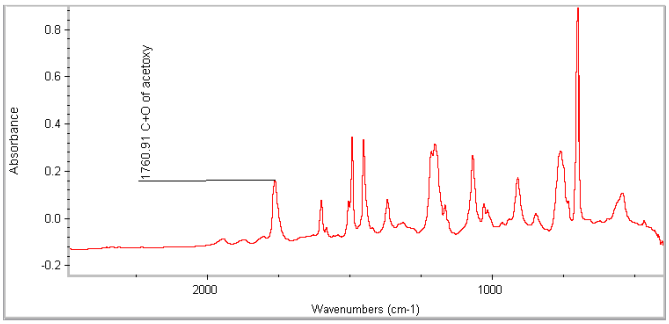
Synthesis Procedure:
Random Copolymer Poly(styrene-co-4 acetoxystyrene) is prepared by radical polymerization of styrene and 4-acetoxy styrene.

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 ^{1}H-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.

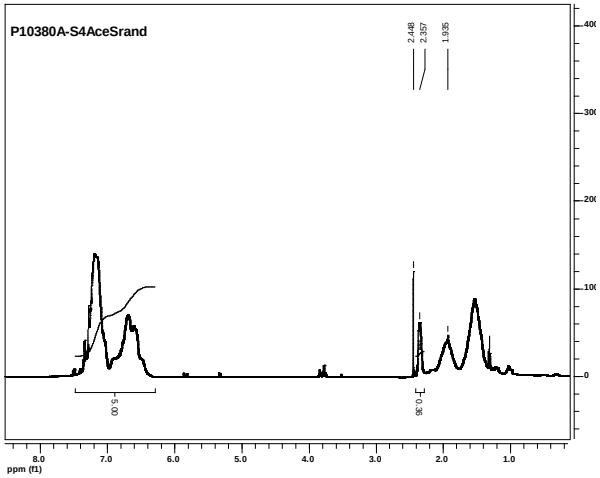
Thermal analysis:
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min.The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:
Random Copolymer Poly(styrene-co-acetoxy styrene) is soluble in $CHCl_3$, THF, DMF

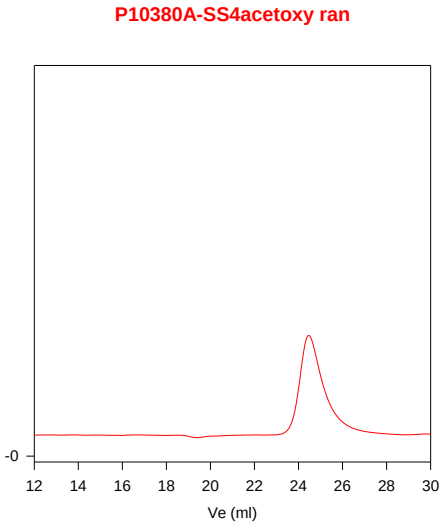
FTIR of the product:



^{H}NMR spectrum of the random polymer



SEC for the polymer



Size exclusion chromatograph of copolymer of Poly(styrene-co-4-hydroxy styrene)random copolymer
M_n=8,000, M_w=9,200, PI=1.15