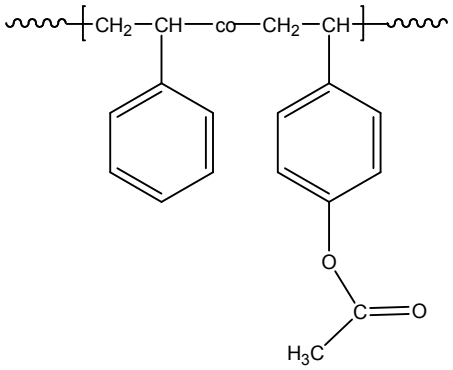
**Sample Name:**
**Random Copolymer poly(styrene-co-4-acetoxy styrene)**
**Sample #: P10381A- SS4acetoxy**

**Structure:**




**Composition:**
P4acetoxy (mol%) : 10%

| Mn x $10^3$ PS-co-P4AcetoxyS | PDI |
|---|---|
| 10.5 | 1.18 |
| $T_g$ for random polymer | 103°C |

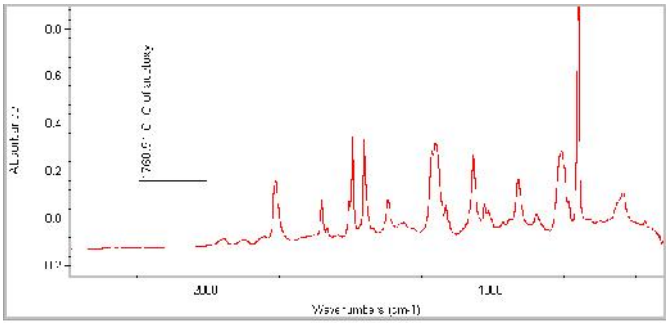
**Synthesis Procedure:**
Random Copolymer Poly(styrene-co-4 acetoxystyrene) is prepared by radical polymerization of styrene and 4-acetoxy styrene.

**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.

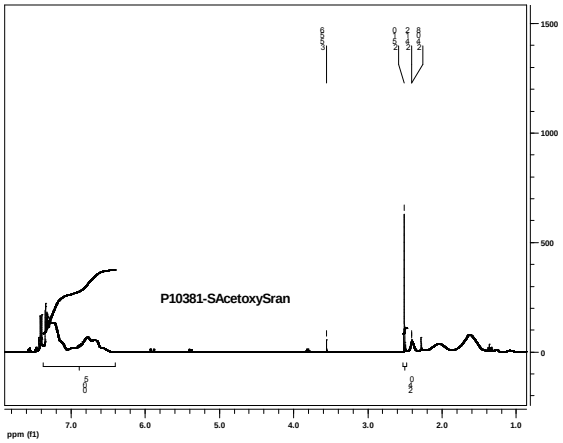
**Thermal analysis:**
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min.The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature ($T_g$).

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

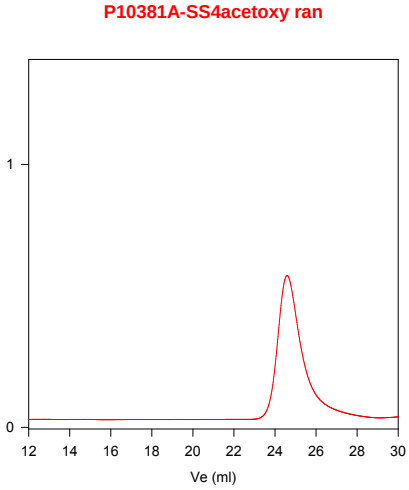
**FTIR of the product:**




**$^1$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
$M_n$=10,500, $M_w$=12,200, PI=1.18