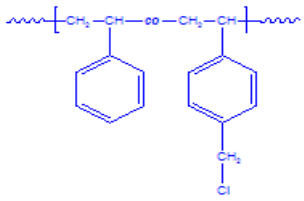
Sample Name: **Poly(styrene–co–4-chloromethyl styrene), random**

Sample #: **P43990-SSMeClran**

Structure:



Composition:

Mn x 10^3 PS-co-PSMeCl	PDI
7.5	1.3
T_g for random polymer: 88°C	
PS-MeCl = 29 mol%	

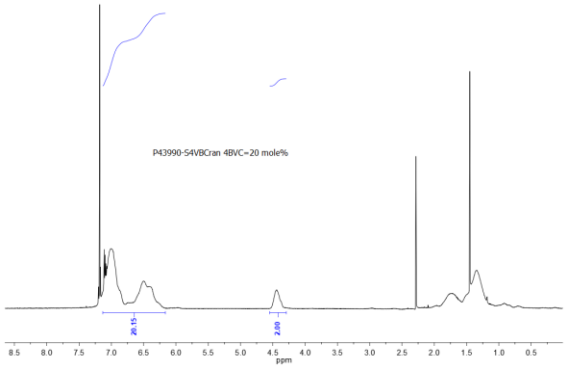
Synthesis Procedure:
Random Copolymer Poly(styrene-co-p-chloromethyl styrene) is prepared by radical polymerization of styrene and p-chloromethyl styrene in the presence of TEMPO .

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 chloromethyl styrene at about 4.6 ppm.

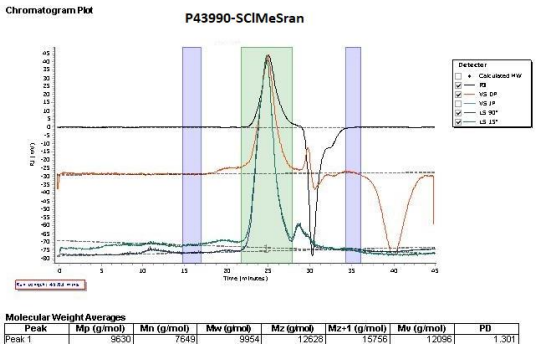
Thermal analysis:
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min.The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:
Random Copolymer Poly(styrene-co-methyl methacrylate) is soluble in $CHCl_3$, THF, DMF, toluene and precipitated out from methanol.

^{1}H-NMR Spectrum of the random copolymer:



SEC profile of the polymer:



DSC thermogram for the sample: