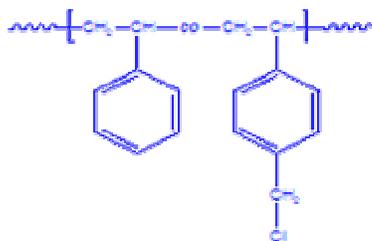


Sample Name:

Random Copolymer Poly(styrene-co-p-chloromethyl styrene)

Sample #: P2132 SSMeClran

Structure:



Composition:

PSMeCl (mol%) : 19.96

Mn x 10 ³ PS-co-PSMeCl	PDI
27.9	1.18
T _g for random polymer	95°C

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 ¹H-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.

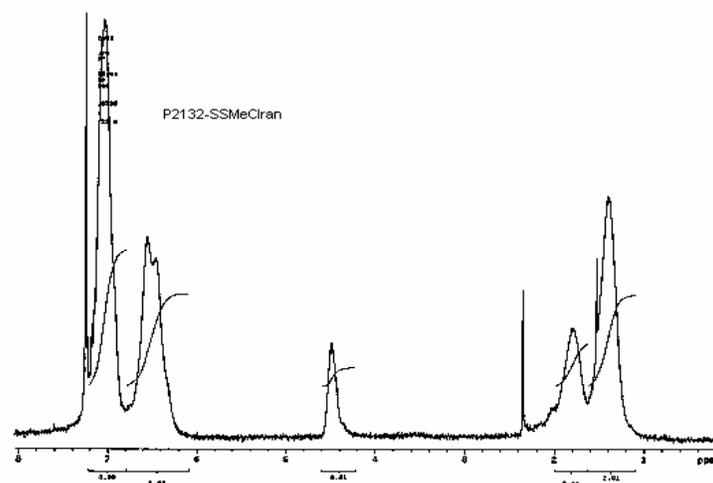
Thermal analysis:

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).

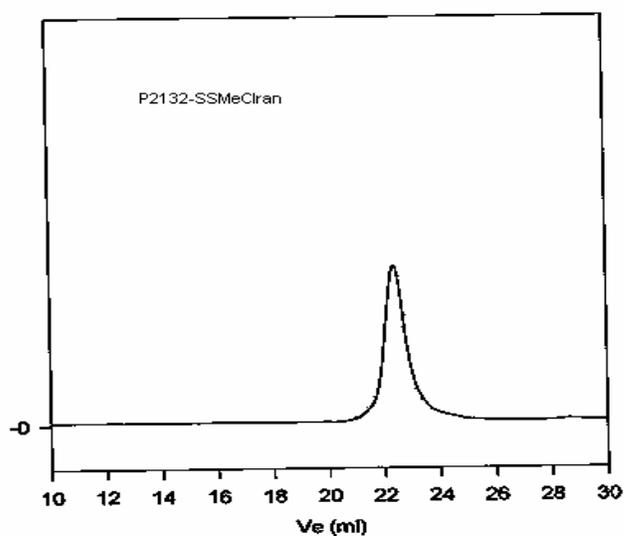
Solubility:

Random Copolymer Poly(styrene-co-methyl methacrylate) is soluble in CHCl₃, THF, DMF, toluene and precipitated out from methanol.

¹H-NMR Spectrum of the random copolymer:



SEC for the polymer



Size exclusion chromatograph of poly(styrene-co-p-chloromethylstyrene):
M_n=27900, M_w=32900, PI=1.18 PSMcCl content: 19.96 mol%

DSC thermogram for the sample

