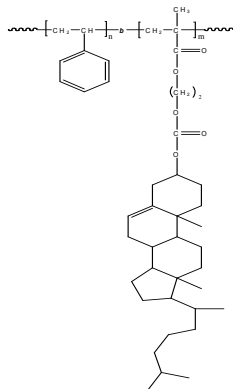


Sample Name:

Poly(styrene-b-2-cholesteryloxy carbonyloxy ethyl methacrylate)

Sample #P2702- SHEMAc**Structure:****Composition:**

Mn x 10 ³ S-b-HEMAc	Mw/Mn (PDI)
29-b-28	1.06

Glass transition temperature at a glance

T _g for PS block	100°C
T _g for PHEMAc block	Not distinct

Synthesis Procedure:

Poly(styrene-b-cholesteryloxy carbonyloxy ethyl methacrylate) is prepared by living anionic polymerization with sequence addition of styrene followed by trimethylsiloxy ethyl methacrylate (HEMA-TMS). The cholesterol unit is added by deprotection of the OH group followed by esterification with cholesteryl chloroformate in presence of pyridine.

Characterization:

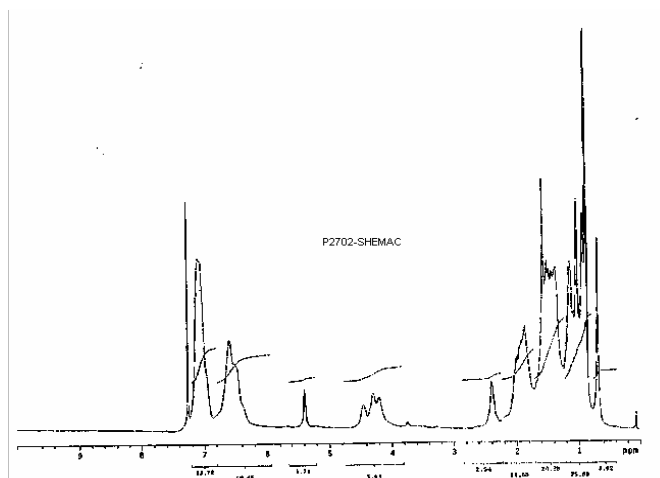
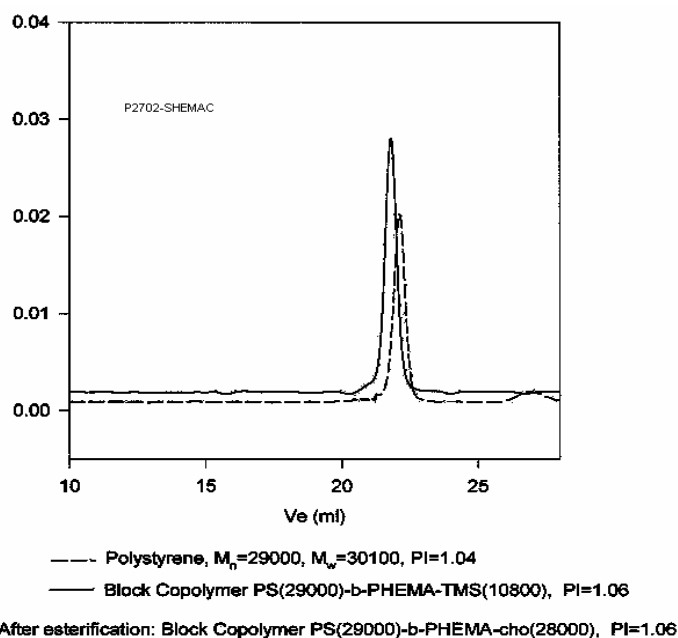
An aliquot of the polystyrene block was terminated before addition of trimethylsiloxy ethyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the styrene protons at 6.3-7.2 ppm with the peak area of ethyl methacrylate. Block copolymer PDI is determined by SEC.

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:

Poly(styrene-b-hydroxy ethyl methacrylate) is soluble in THF and CHCl₃.

¹H-NMR spectrum of the sample**SEC profile of the block copolymer****DSC thermogram for PS block:**