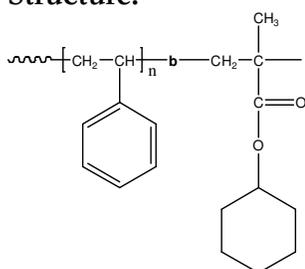


**Sample Name:** Poly(styrene-b-cyclohexyl methacrylate)

**Sample #:** P3057-SCHMA

(Contains about 15-20% homopolystyrene in the final block polymer)

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> S-b-CHMA	Mw/Mn (PDI)
675.0-b-273.0	1.25

**Glass transition temperature at a glance**

T <sub>g</sub> for PS block	106°C
T <sub>g</sub> for PCHMA block	Not distinct

**Synthesis Procedure:**

Poly(styrene-b-cyclohexyl methacrylate) is prepared by anionic polymerization with sequence addition of styrene followed by cyclohexyl methacrylate.

**Characterization:**

An aliquot of the polystyrene block was terminated before addition of cyclohexyl 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 <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the styrene protons at 6.3-7.2 ppm with the peak area of cyclohexyl methacrylate protons at ppm. Block copolymer PDI is determined by SEC.

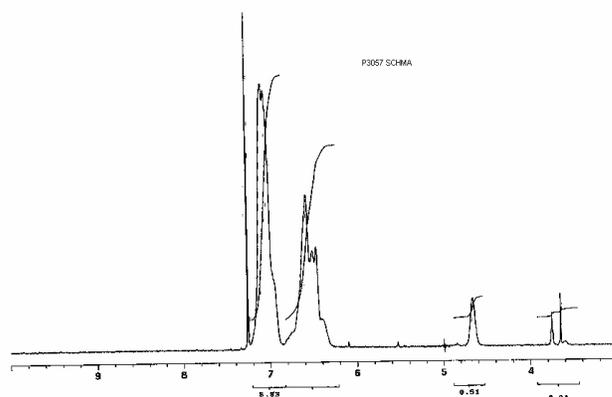
**Thermal analysis**

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<sub>g</sub>).

**Solubility:**

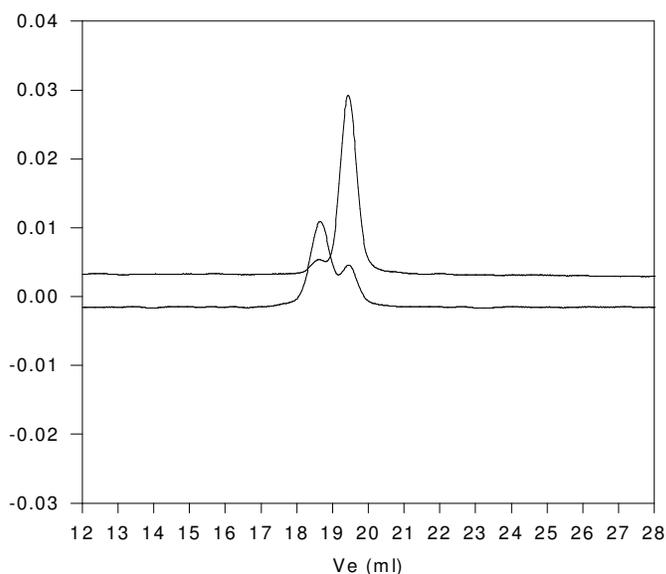
Poly(cyclohexyl methacrylate) is soluble in THF, CHCl<sub>3</sub>.

**<sup>1</sup>H NMR spectrum of the sample**



**SEC profile of the block copolymer**

**P3057-SCHMA**



— Polystyrene, M<sub>n</sub>=675,000, M<sub>w</sub>=776,000, PI=1.15

— Block Copolymer PS(675,000)-b-PCHMA(273,000), PI=1.25

**DSC thermogram for the PS block**

