**Sample Name:**
Poly(styrene-b-isobutyl-POSS methacrylate)
Sample #: P14022-SPOSSMA
Structure:
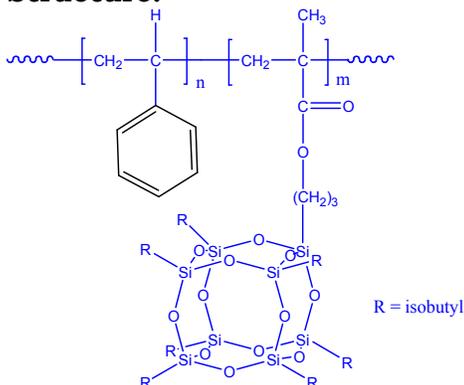
R = isobutyl

Composition:

Mn × 10³ S-b-POSSMA	PDI
6.0-b-23.0	1.6

Synthesis Procedure: Poly(Styrene-b-isobutyl-POSS methacrylate) Block copolymer is synthesized by living anionic polymerization or by controlled radical process. The obtained polymer was precipitation in hot methanol to remove unreacted POSSMA monomer.

Characterization: Polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from HNMR.

Solubility: Polymer is soluble in THF, toluene. It is precipitated into methanol.

Chemical Shifts of the Products:
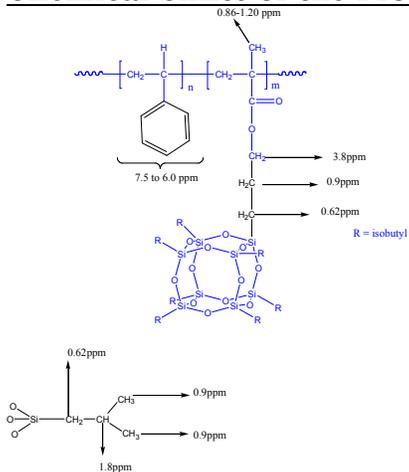
¹H-NMR Spectrum of the block copolymer:
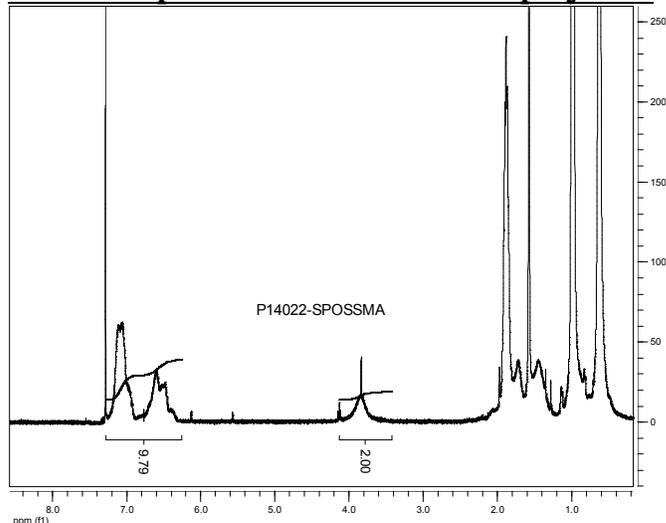
P14022-SPOSSMA

SEC of the block copolymer:

P14022-SPOSSMA

Ve (ml)
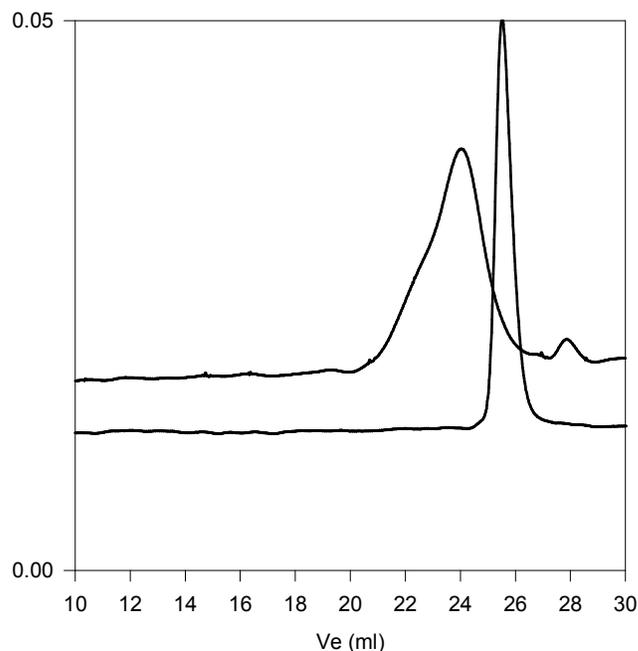
Poly(styrene): M_n=6000, M_w=6300, M_w/M_n=1.05

Block Copolymer PS(6000)-b-POSSMA(23,000),M_w/M_n=1.6

Thermal analysis of the *P14022-SPOSSMA*

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).

Melting and crystallization curve for the sample

The melting temperature (T_m) was taken as the maximum of the endothermic peak where as the crystallization temperature (T_c) was considered as the minimum of the exothermic peak.

Thermal analysis results at a glance:

Sample	T_m (°C)	T_c (°C)	T_g (°C)
POSSMA block	71	-	-
PS block	-	-	90

Glass transition for PS block:

Melting curves for POSSBuMA: