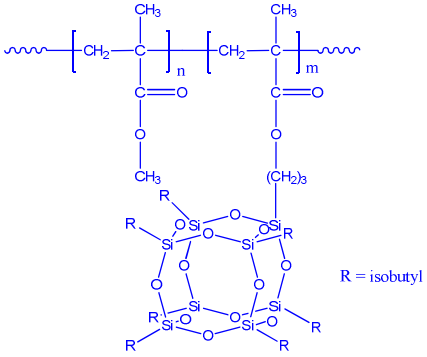
Sample Name:
Poly(methyl methacrylate-b-isobutyl-POSS methacrylate)
Sample #: P9701-MMAPOSSMA
Structure:



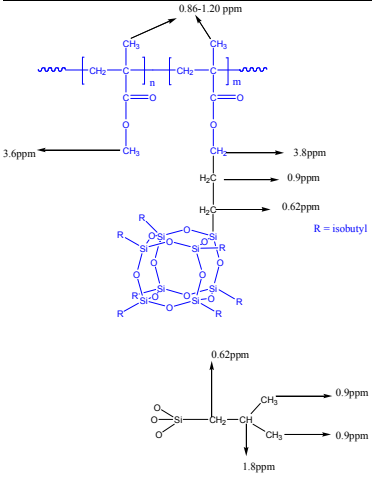
Composition:

Mn × 10^3 MMA-b-POSSMA	PDI
6.8-b-22.0	1.09

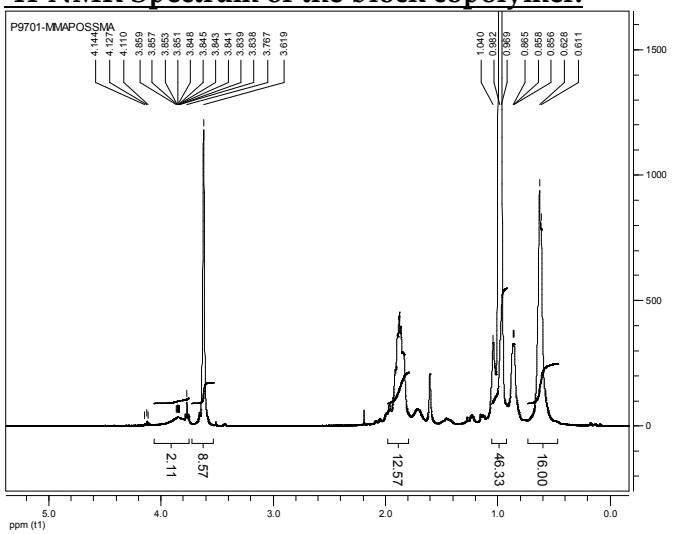
Synthesis Procedure: Poly(Methyl methacrylate-b-isobutyl-POSS methacrylate) block copolymer is synthesized by living anionic polymerization with sequence addition of methyl methacrylate followed by addition of POSS methacrylate monomer. The obtained polymer was precipitation in methanol.

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 and toluene. It is precipitated into methanol.

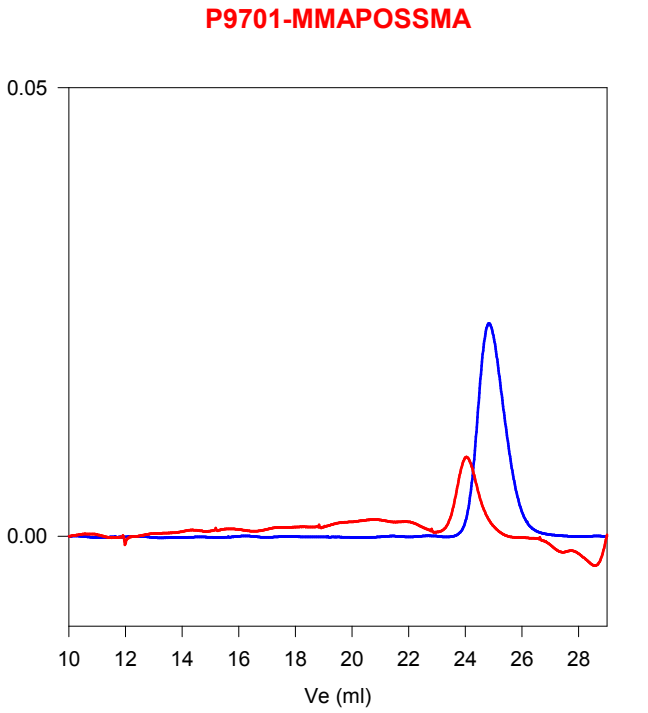
Chemical Shifts of the Products:



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



SEC of the block copolymer:



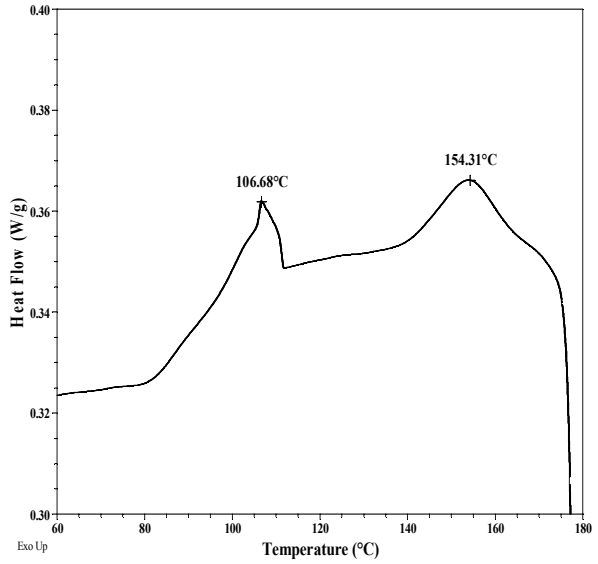
Thermal analysis of the P9701- MMAPOSSMA

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10^{o}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.

Crystallization curves POSSMA block:



Thermal analysis results at a glance:

Sample	T_m (^{o}C)	T_c (^{o}C)	T_g (^{o}C)
MMA block	-	-	Not distinct
POSSMA block	110 &216	107&154	-

Melting curves for POSSMA block: