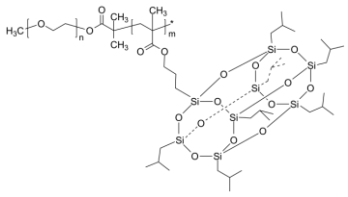
Sample Name:
Poly (ethylene oxide)-b-poly (heptaisobutyl octasilsesquioxane [POSS] propyl methacrylate)

Sample #: **P14018-EOPOSSisoBuMA**

Structure:



Composition:

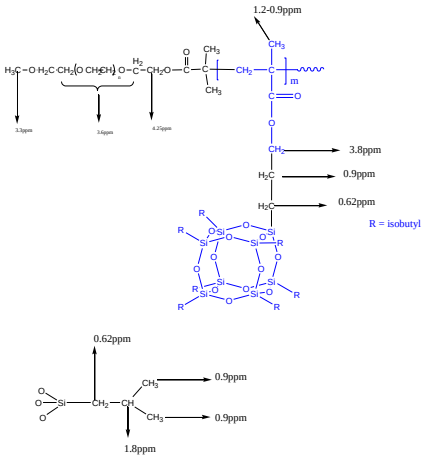
Mn x 10^3 PEO-b-POSSisoBuMA	PDI
2.0-b-23.0	1.13

Synthesis Procedure:
Polymer is synthesized by controlled radical polymerization process.

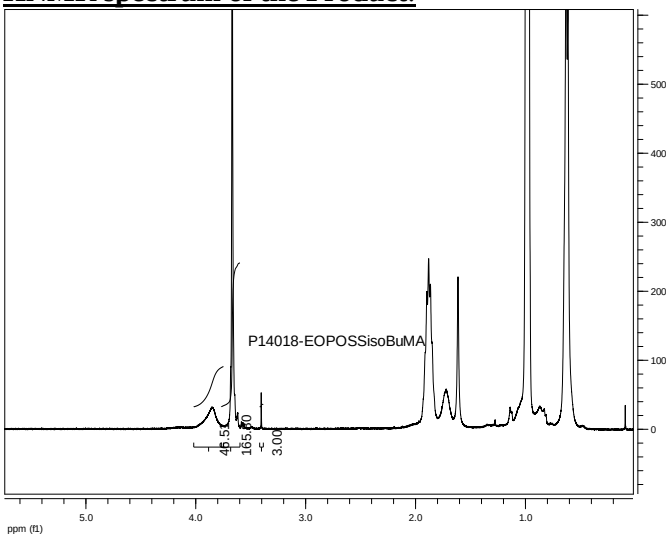
Purification of the polymer:
The un-reacted PEG can be removed by stirring the polymer in hot water/Methanol. The obtained polymer dissolved in $CHCl_3$/toluene and pass through the column packed with silica. The polymer was recovered by precipitation in cold ether/hexane mixture.

Solubility:
Polymer is soluble in $CHCl_3$, THF and toluene. The polymer precipitated out from hexane.

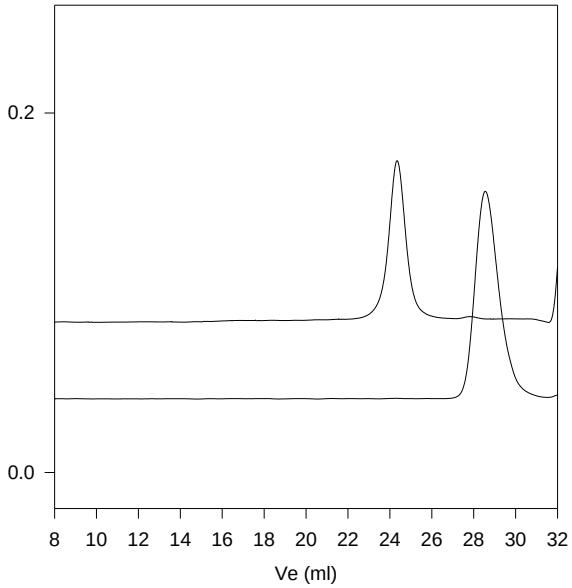
Chemical Shifts:



HNMR spectrum of the Product:



SEC profile of the block copolymer:
P14018- EOPOSSisoBuMA



Size exclusion chromatography:

—— Poly(ethylene glycol) monomethoxyl ether, M_n=2000, M_w=2100, PI=1.05

—— Block Copolymer PEO(2000)-b-PSSisoBuMA(23,000), PI=1.13
Composition from ^{H} NMR

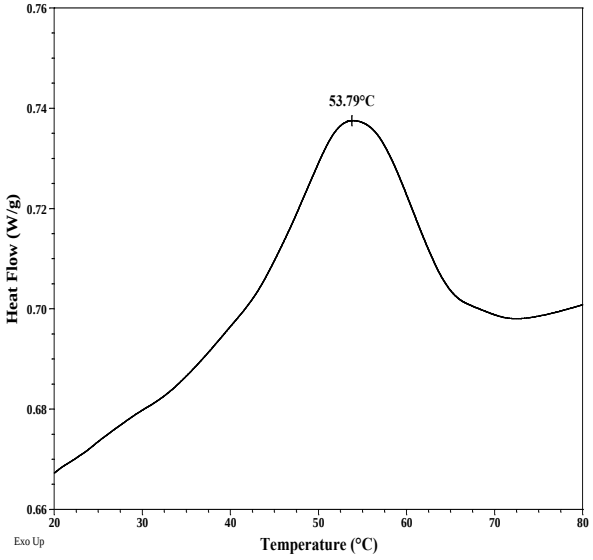
Thermal analysis of the P14018-EOPOSSisoBuMA:
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10ºC/min.The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (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.

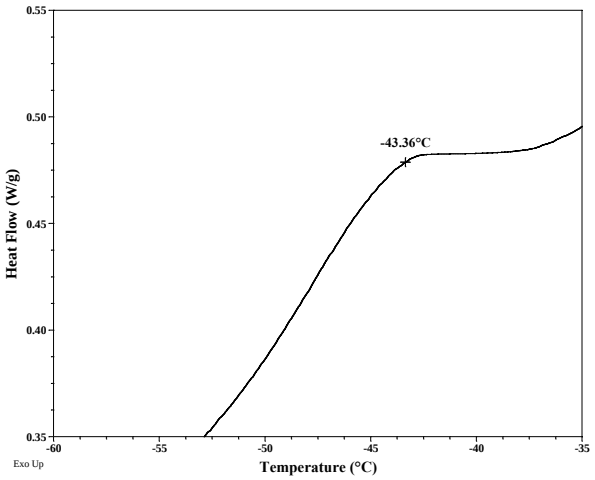
Thermal analysis results at a glance:

Sample	T_m (ºC)	T_c (ºC)	T_g (ºC)
POSSMA block	109	54	-
PEO block	16	-43	-

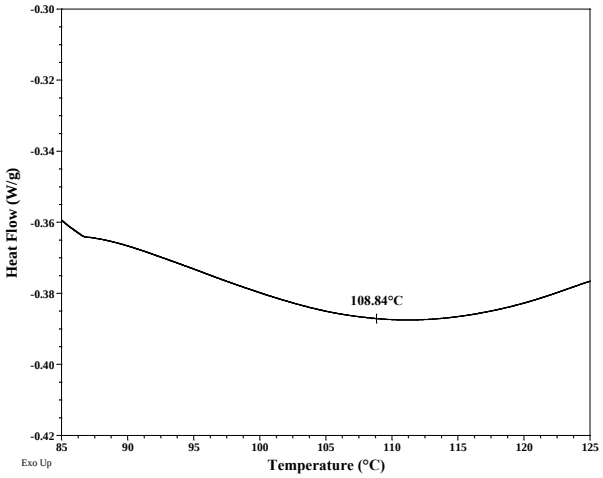
Crystallization curves POSSisoBuMA block:



Crystallization curve for PEO block:



Melting curves for POSSBuMA:



Melting curves for PEO block: