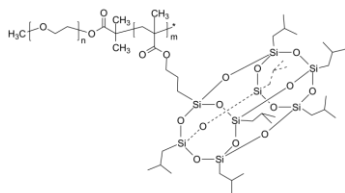


Sample Name:

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

Sample #: **P14021-EOPOSSisoBuMA**

Structure:



Composition:

Mn x 10 ³ PEO-b-POSSisoBuMA	PDI
5.0-b-17.5	1.20

Synthesis Procedure:

Polymer is synthesized by controlled radical polymerization process.

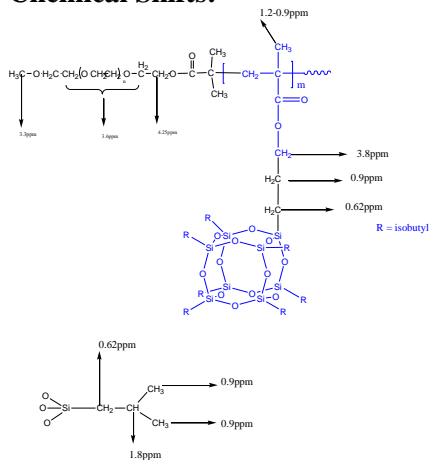
Purification of the polymer:

The un-reacted PEG can be removed by stirring the polymer in hot water/Methanol. The obtained polymer dissolved in CHCl₃/toluene and pass through the column packed with silica. The polymer was recovered by precipitation in cold ether/hexane mixture.

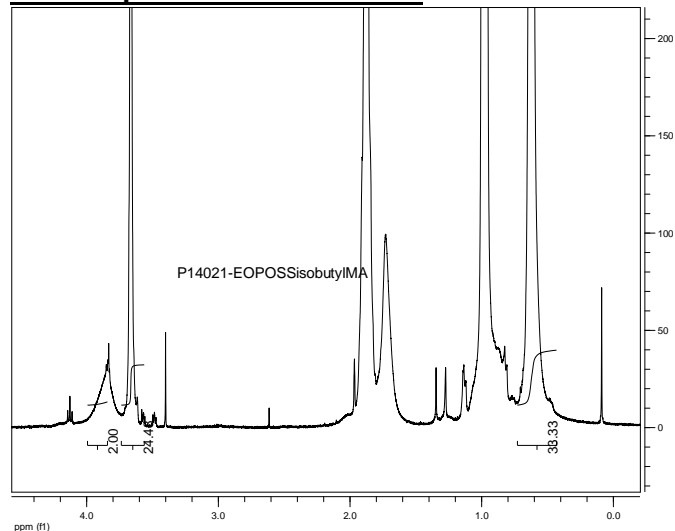
Solubility:

Polymer is soluble in CHCl₃, THF and toluene. The polymer precipitated out from hexane.

Chemical Shifts:

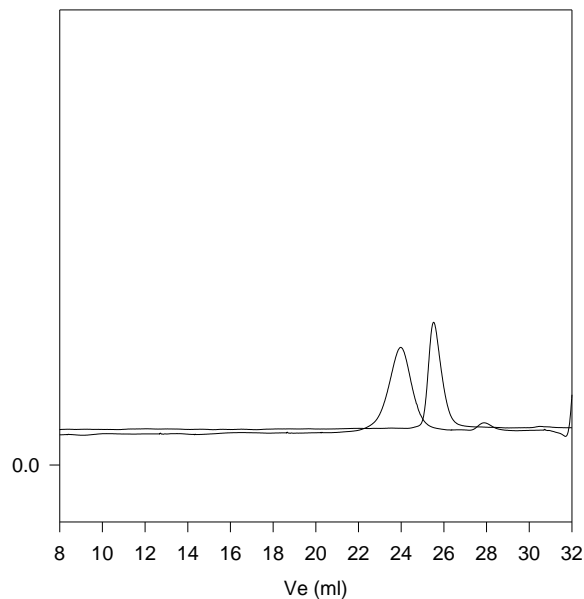


HNMR spectrum of the Product:



SEC of the block copolymer:

P14021- EOPOSSisoBuMA



Size exclusion chromatography:

- Poly(ethylene glycol) monomethoxyl ether, M_n=5000, M_w=5500, PI=1.05
 - Block Copolymer PEO(5000)-b-PSSisoBuMA(17,500), PI=1.2
- Composition from ¹H NMR

Thermal analysis of the P14021-EOPOSSisoBuMA

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).

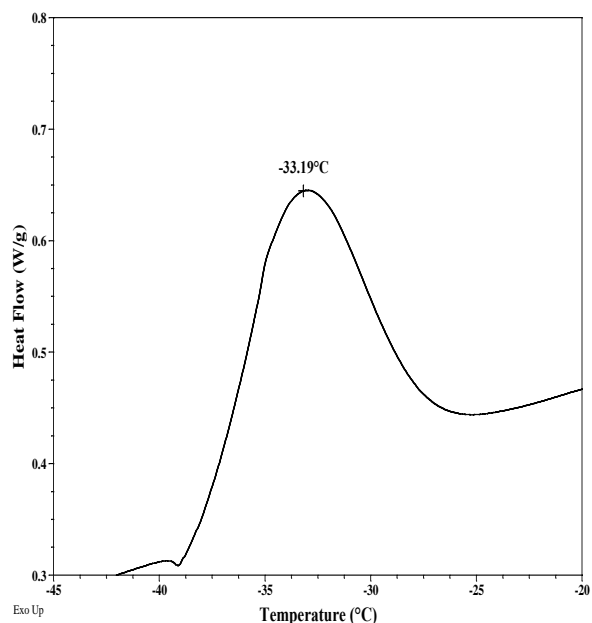
Melting and crystallization curve for the sample

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.

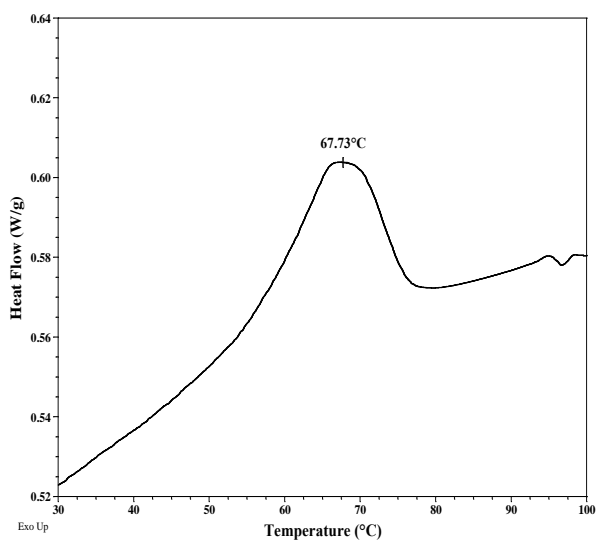
Thermal analysis results at a glance:

Sample	T_m (°C)	T_c (°C)	T_g (°C)
POSSMA block	127	68	-
PEO block	16	-33	-

Crystallization curve for PEO block:



Crystallization curves POSSisoBuMA block:



Melting curves for PEO block:

