

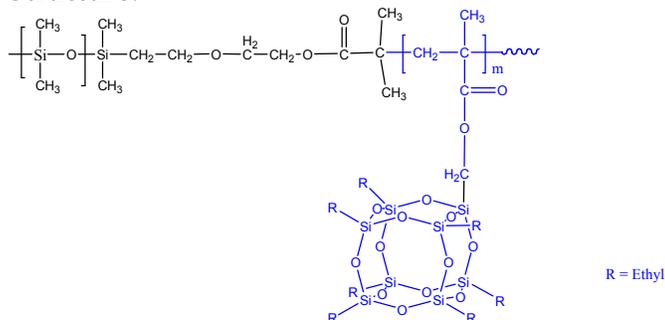
Sample Name:

Poly(dimethylsiloxane-b-POSSEthylmethacrylate)

POSSEtMA: 2-Propenoic acid, 2-methyl-3(heptaethylpentacyclo 9.5.1.13,9.15,15.17,13]octasiloxanyl)methylester

Sample #: *P14029-DMSPOSSEtMA*

Structure:



Composition:

| | |
|---|------|
| Mn x 10 ³ PDMS-b-POSSEtMA | PDI |
| 5.0-b-19.5 | 1.15 |

Synthesis Procedure:

Polymer is synthesized by controlled radical polymerization process.

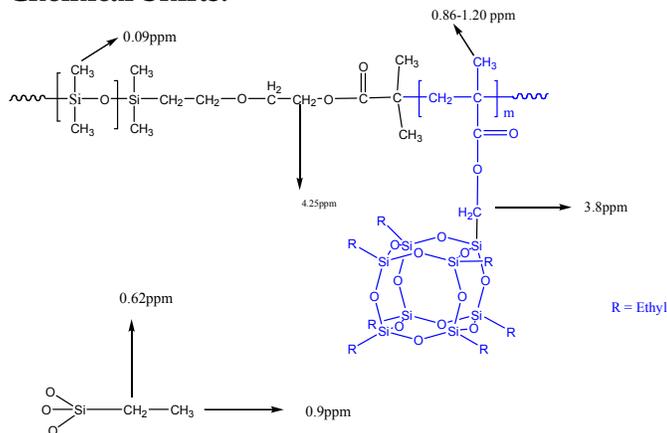
Purification of the polymer:

The obtained polymer dissolved in CHCl₃/toluene and pass through the column packed with silica. The polymer was recovered by precipitation in cold ether/ethanol mixture.

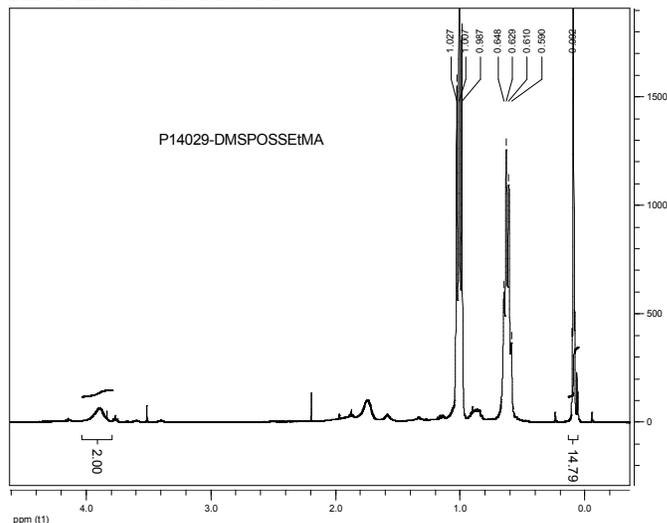
Solubility:

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

Chemical Shifts:

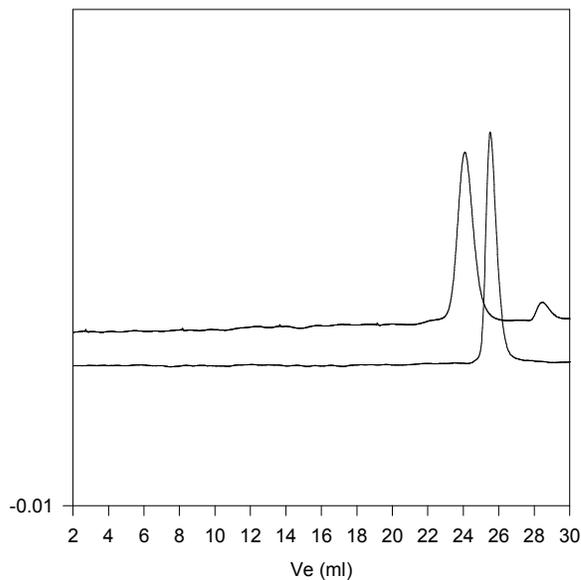


HNMR of the Product:



SEC of the block copolymer:

P14029-DMSPOSSEtMA



Size exclusion chromatography of poly(DMS-b-acrylate):

— Polydimethylsiloxane, M_n=5000, M_w=5500, PI=1.08

— Block Copolymer PDMS(5000)-b-POSSEtMA(19500), PI=1.15

Thermal analysis of the P14029-DMSPOSSEtMA

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).

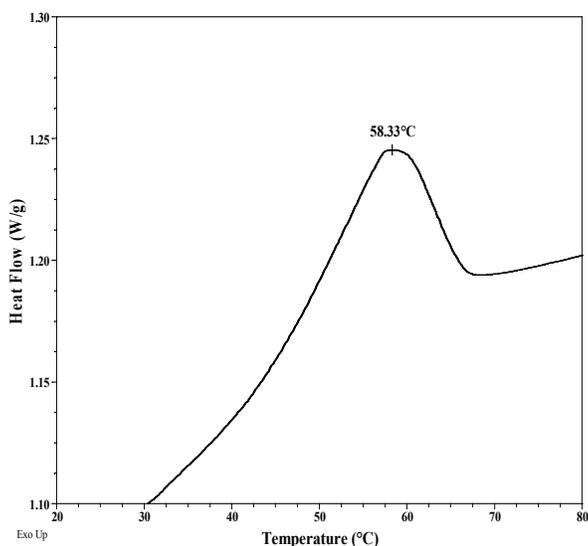
Melting and crystallization curve for the sample

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 | 69, 103 | 58 | - |
| DMS block | - | - | - |

Crystallization curves POSSisoBuMA block:



Melting curves for POSSBuMA:

