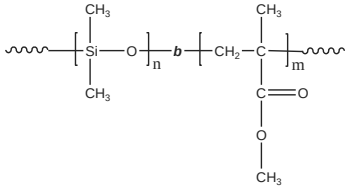
Sample Name: **Poly (dimethylsiloxane-b- methyl methacrylate)**

Sample #: **P5832-DMSMMA**

Structure:



Composition:

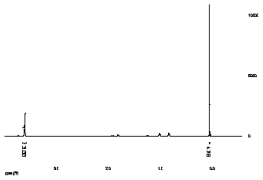
Mn x 10^3 DMS-MMA	Mw/Mn (PDI)
8.0-b-14.0	1.4

Synthesis Procedure:
The polymer is prepared by controlled radical process as reported in J.X. Zhang, S.K. Varshney, "Simple Approach for the Scale-up Production of Block Copolymer of Polydimethylsiloxane with (Meth)acrylic Ester Monomers" Designed Monomers and Polymers, 2002, 1, 79.

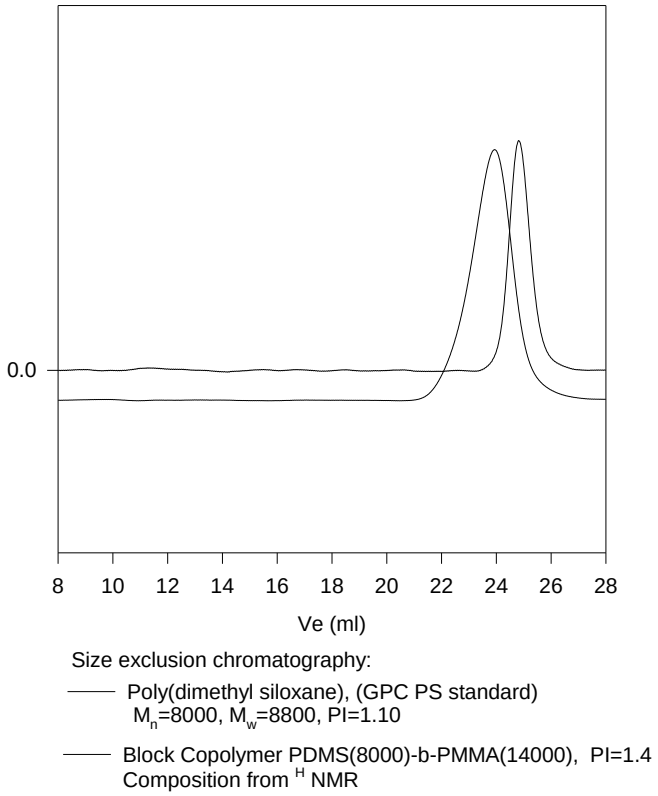
Characterization:
An aliquot of the anionic poly (methyl methacrylate) block was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI) before addition of tBuMA. The final block copolymer composition was calculated from ^{1}HNMR spectroscopy by comparing the peak area of the dimethyl siloxane protons near 0.08 ppm with the methyl protons of MMA at about 3.6 ppm. Block copolymer PDI is determined by SEC.

Solubility:
The polymer is soluble in THF, $CHCl_3$, and DMF, not soluble in methanol, hexane & ether.

^{1}HNMR spectrum of the polymer:



SEC profile of the block copolymer: P5832-DMSMMA



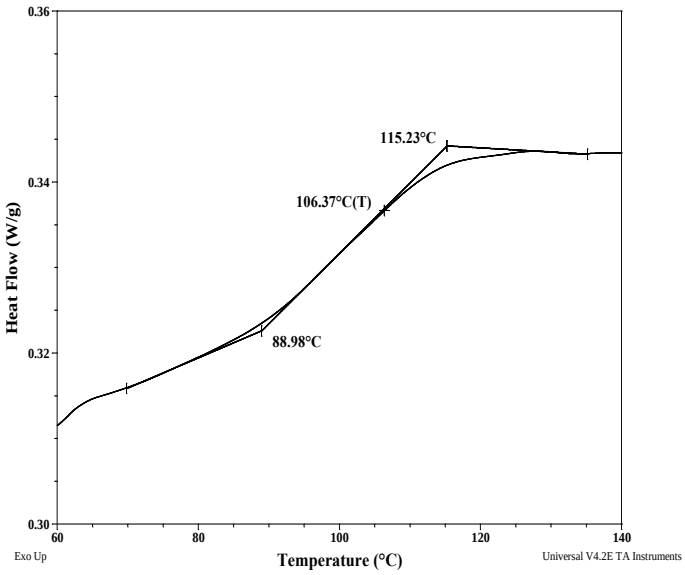
Thermal analysis of the sample# P5832-DMSMMA

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10^oC/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). The melting temperature (T_m) of the DMS was taken as the maximum of the endothermic peak in the thermogram.

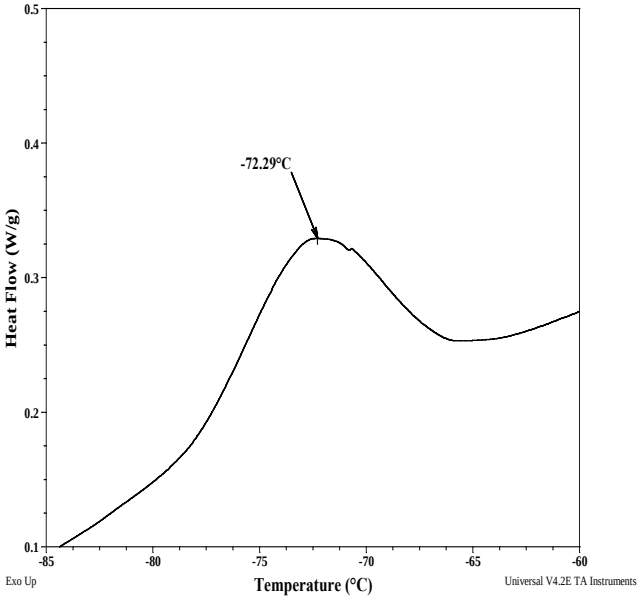
Thermal analysis results at a glance

Sample	**T_m (^oC)**	**T_c (^oC)**	**T_g (^oC)**
MMA	-	-	106
DMS	-42	-72	-127 (lit)

Thermogram for MMA block:



Crystallization peak for DMS block:



Melting curve for DMS block: