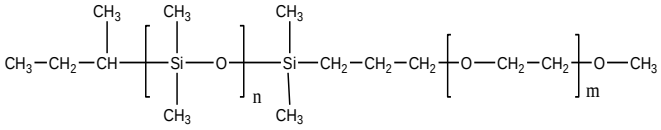
Sample Name:
Poly(dimethyl siloxane -b- ethylene oxide)

Sample #: **P43053-DMSEO**

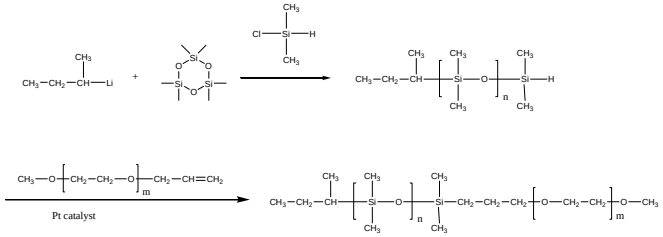
Structure:



Composition:

$Mn \times 10^3$ PDMS-b-PEO	PDI
1.0-b-2.1	1.12

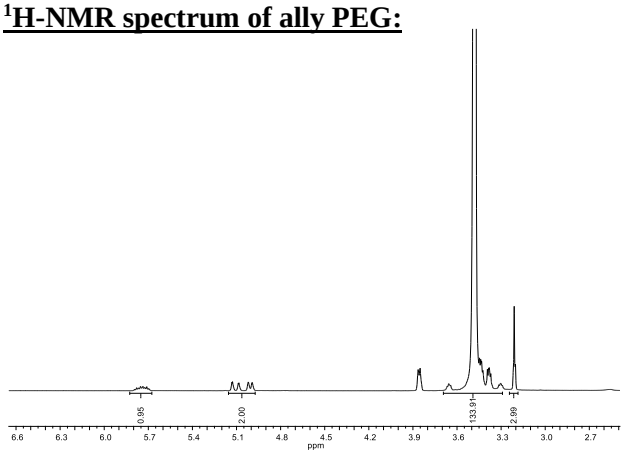
Synthesis Procedure:
The polymer is prepared by living anionic polymerization of hexamethyl cyclotrisiloxane followed by hydrosililation reaction with ally PEO using Pt catalyst. The reaction scheme is shown below:



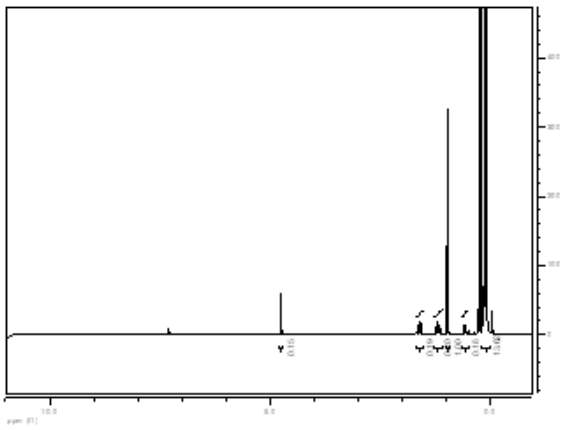
Characterization:
An aliquot of the Poly(dimethyl siloxane) block was terminated before hydrosililation analyzed by size exclusion chromatography (SEC) and NMR to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ^{1}H-NMR spectroscopy by comparing the peak area of the siloxane protons at about 0.08 ppm with the peak area of ethylene oxide protons at about 3.4ppm.

Solubility:
The polymer is soluble in THF, not soluble in MeOH, ether and hexane.

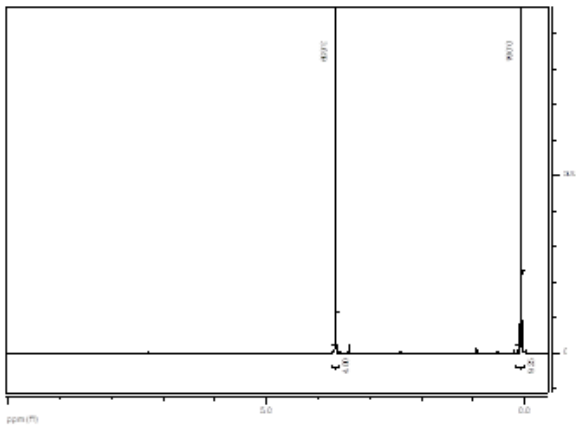
^{1}H-NMR spectrum of ally PEG:



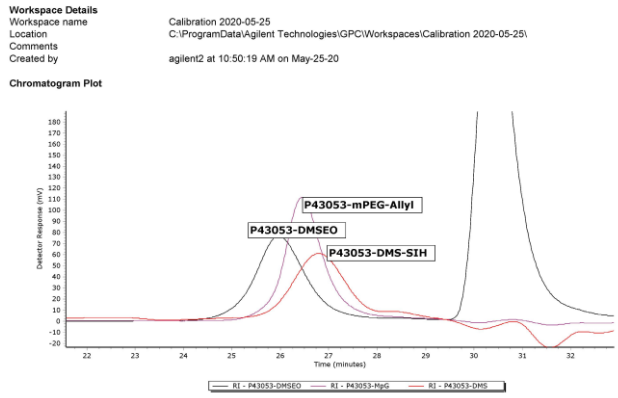
^{1}H-NMR spectrum of PDMSSiH:



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



SEC elugram of the polymer:



Thermal analysis of the sample# P43053-DMSEO:

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).

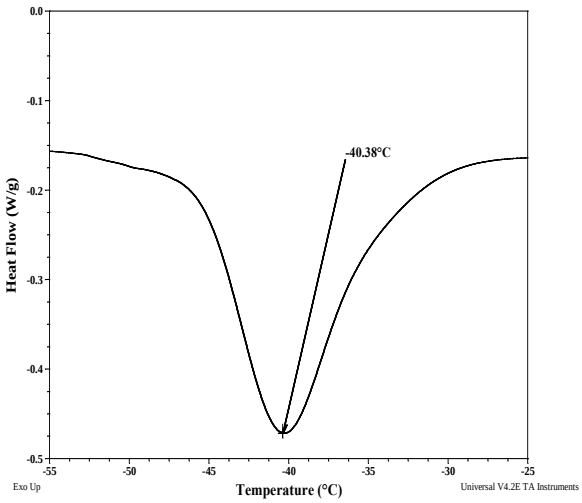
Melting and crystallization curve for the sample:

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.

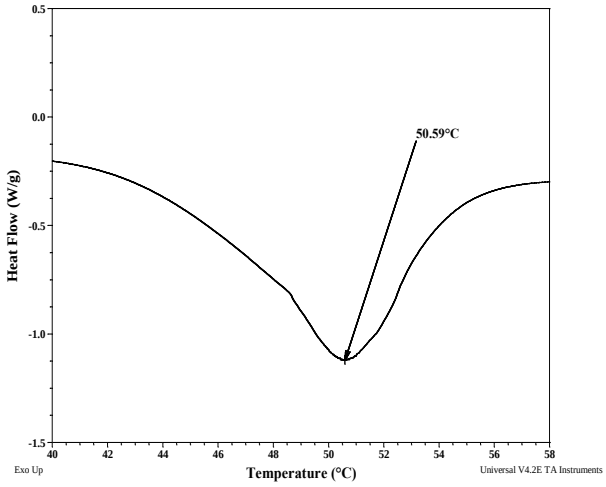
Thermal analysis results at a glance

Sample	T_m (°C)	T_c (°C)	T_g (°C)
PEO	51	-23	Not found
PDMS	-40	Not found	-127 (Lit)

Melting curve for DMS block:



Melting curve for PEO block:



Crystallization curve for DMS block: