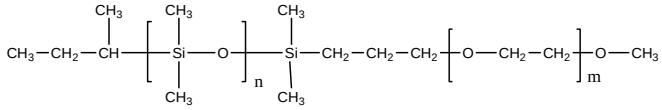
Sample Name:
Poly(dimethyl siloxane -b- ethylene oxide)

Sample #: **P8365E-DMSEO** ***Electronic grade***

Structure:

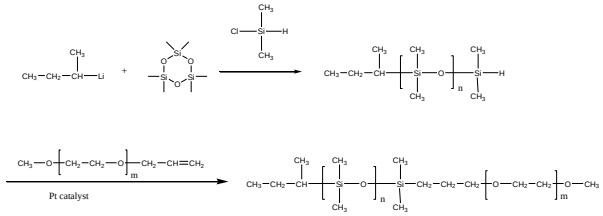


Composition:

Mn x 10^3 PDMS-b-PEO	PDI
0.6-b-1.1	1.2

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.

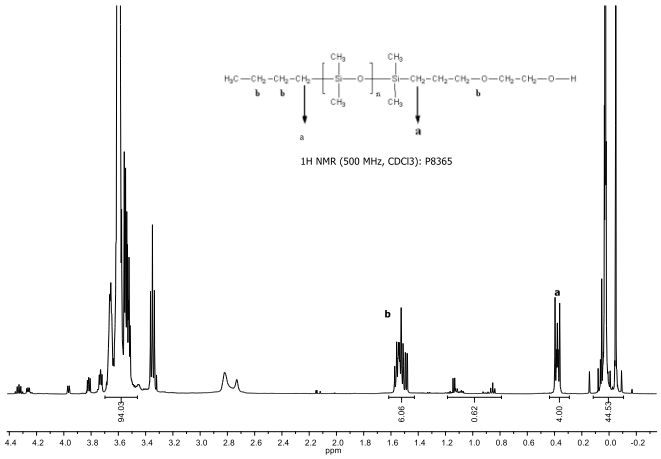
Solubility:

Poly(dimethyl siloxane -b- ethylene oxide) is soluble in THF, CHCl3 and methanol .

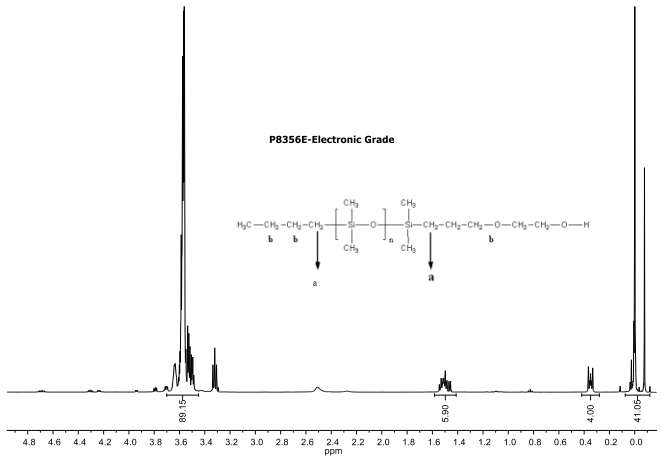
Purification:

Polymer might contain some traces amount of unreacted allyoxy poly ethylene glycol and Pt catalyst. Polymer dissolved in CHCL3 and pass through Al2O3 neutral 2 times and the product recover after removing CHCl3. Polymer concentrated and dissolved in ethanol (warm) and kept in fridge over-night. The solution decanted and polymer dried under vacuum at 90 oC to remove any volatiles.

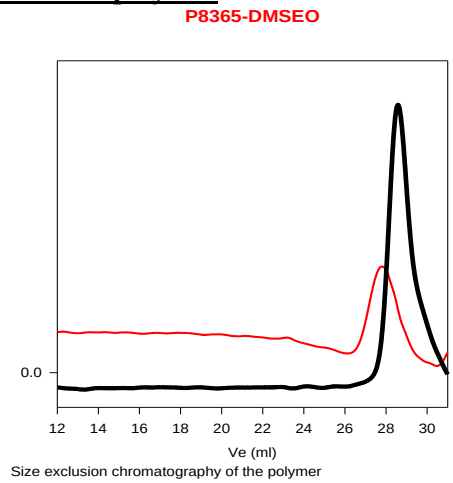
^{1}H-NMR Spectrum of the final block copolymer:



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



SEC of the polymer



Size exclusion chromatography of the polymer

Size exclusion chromatography of monocarbinol terminated poly(dimethyl siloxane):

M_n=600, M_w=750 M_w/M_n=1.2,
PDMS-EO: Mn: 600-b-1100 Mw/Mn: 1.2