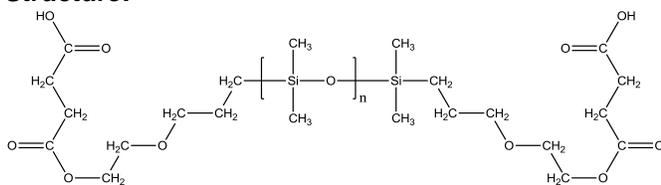


**Sample Name:**  
 $\alpha,\omega$ -Dicarboxy-terminated Polydimethylsiloxane

**Sample #** P18904-DMS2COOH

**Structure:**

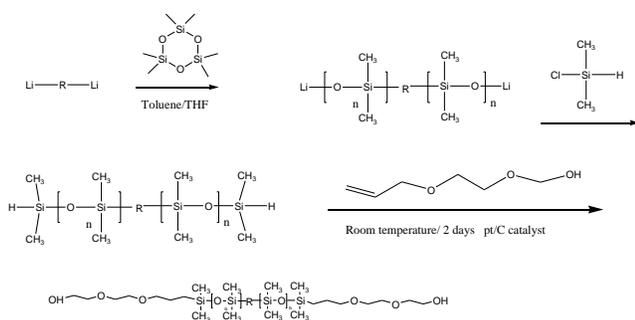


**Composition:**

Mn x 10 <sup>3</sup>	PDI
2.5	1.09
COOH functionality (by titration and from HNMR)	>90%

**Synthesis Procedure:**

Dihydroxy- (carbinol) terminated poly(dimethyl siloxane) was prepared by living anionic polymerization of hexamethyl cyclotrisiloxane. The scheme of the reaction is illustrated below:



The obtained polymer was reacted with succinic anhydride to get the dicarboxylic acid terminated polymer.

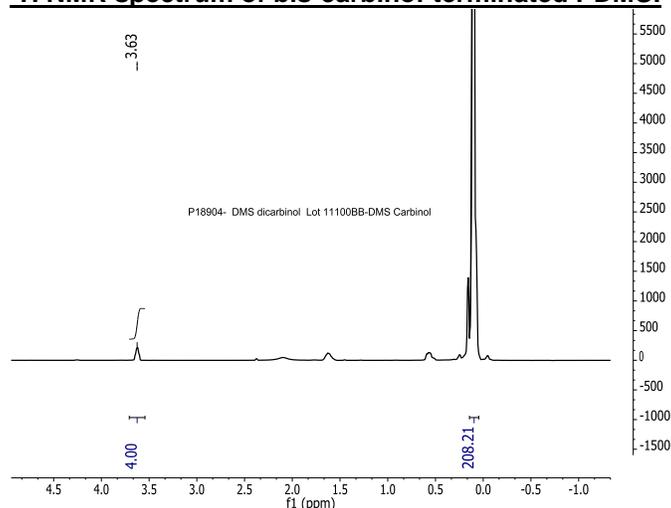
**Characterization:**

The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector.

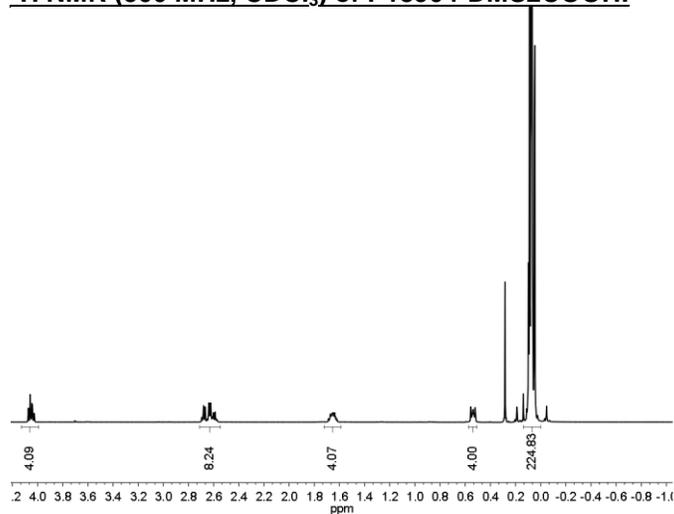
**Reference:**

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.

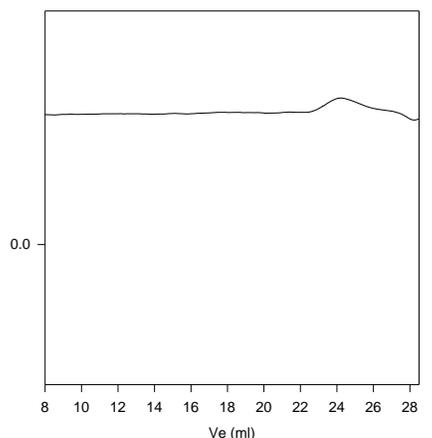
**<sup>1</sup>H NMR spectrum of bis-carbinol-terminated PDMS:**



**<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) of P18904-DMS2COOH:**



**SEC of polymer before reacting with succinic anhydride:**



Size Exclusion Chromatography in THF at 35 °C w.r.t PDMS standards.

M<sub>n</sub> = 2,500, M<sub>w</sub> = 2,700, PI = 1.09

after converting end silanol to Carbinol