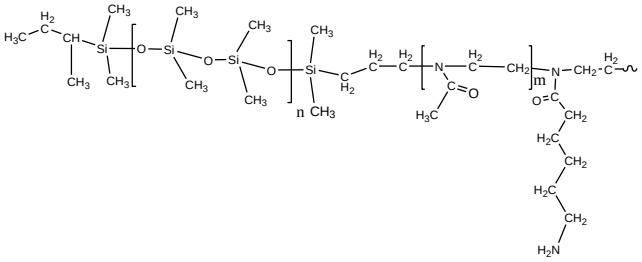
Sample Name:

Amino end functionalized Poly(dimethylsiloxane-b-2-methyloxazoline) Diblock Copolymer

Sample #: **P11392X-DMSMOXZ-NH2**

Structure:



Composition:

M_n x 10^3	PDI
5.0-b-1.4	1.3

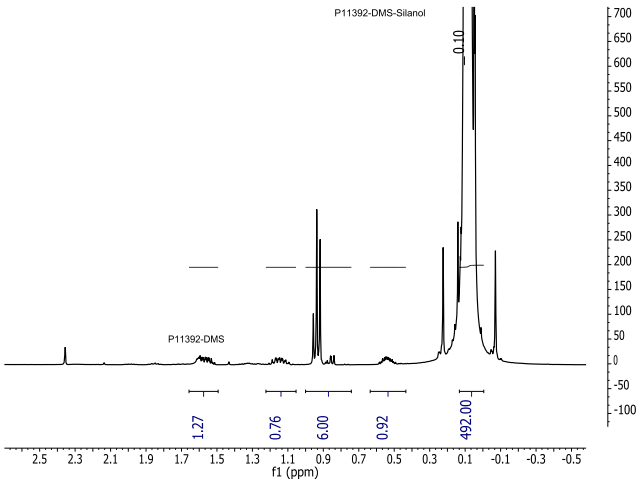
Synthesis Procedure:

The α, Amino terminated Poly(dimethylsiloxane-b-2-methyloxazoline) diblock copolymer was prepared by combination of anionic living polymerization of hexamethylcyclotrisiloxane (D3) and cationic polymerization of 2-methyl oxazoline, using monofunctional initiator followed by termination of syochiometric amount of 2(-N-Boc-aminopentyl)-2-oxazoline. The BOC Amino terminated by hydrolysed selectively without destroying the poly dimethyl siloxane chain. Polymer was recovered in cold acetone, wash couple of times with cold acetone to remove the un-reacted monomer and other side products.

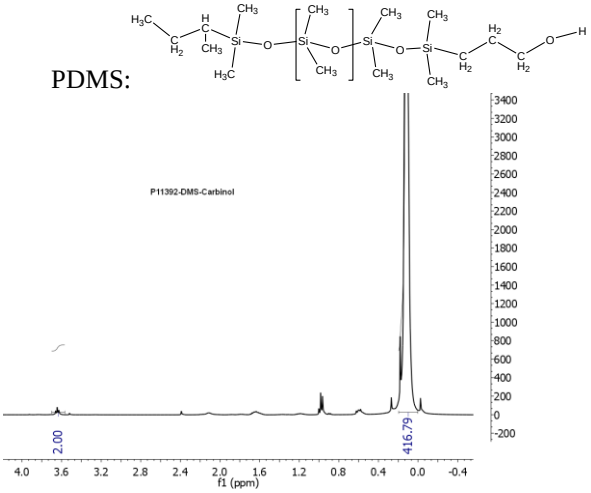
Characterization: Centeral Block: Size exclusion chromatography (SEC): Varian liquid chromatograph equipped with UV and refractive detector. SEC columns from Supelco were used with THF and for the block copolymer in DMF as the eluent. The columns were calibrated with monodisperse poly(dimethyl siloxane). The molecular weights and the polydispersity indices were calculated. The chemical composition was extracted from proton NMR, which was recorded from Varian 500MHz instrument using $CDCl_3$ as solvent. The molecular weight of side block was calculated based on the molecular weight of central block and the chemical composition. The polydispersity index of block copolymer was obtained by SEC as described above.

HNMR of the polymer at different stages of polymerization:

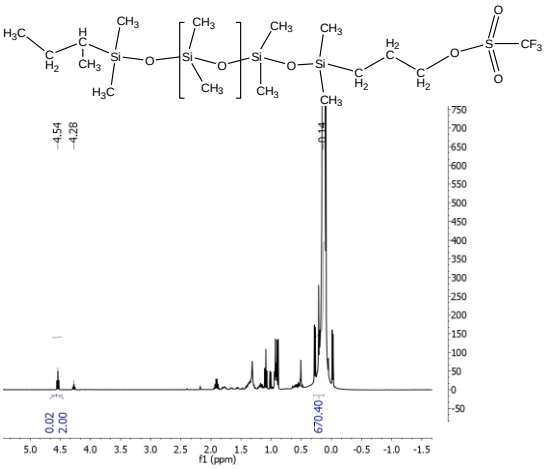
1 **MonoSilanol terminated PDMS of Mn 5000**



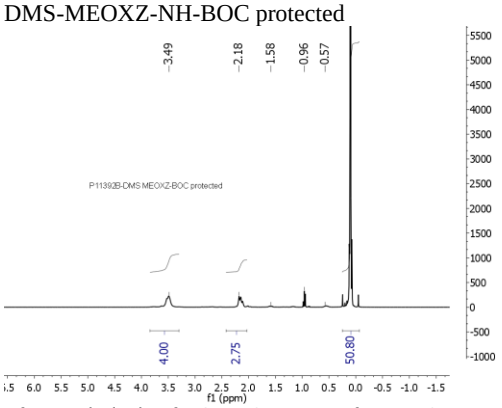
2. Mono carbinol terminated PDMS:



3. Mono Trifluro methane sulfonic acid terminated PDMS:



DMS-MEOXZ-NH-BOC protected



After Hydrolysis of BC-NH2 group to free NH2: