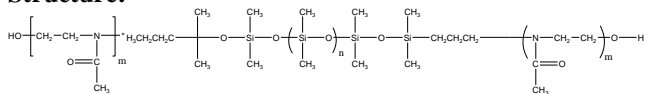


### Sample Name:

Poly(2-methyloxazoline-b-dimethylsiloxane-b-2-methyloxazoline) Triblock Copolymer

Sample #: **P3717B-MOXZDMSMOXZ**

### Structure:



### Composition:

Mn x 10 <sup>3</sup>	PDI
1.3-b-2.5-b-1.3	1.3

The composition was

**(15) methyloxazoline-b-(33) PDMS-b-(15) methyloxazoline**

### Synthesis Procedure:

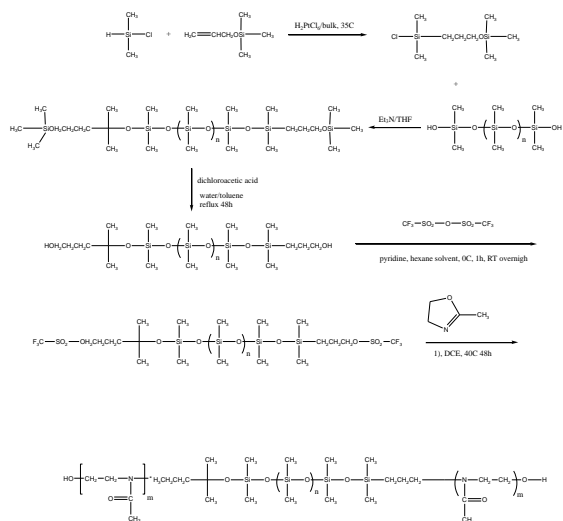
The  $\alpha$ - $\omega$  dihydroxy terminated Poly(2-methyloxazoline-b-dimethylsiloxane-b-2-methyloxazoline) triblock copolymer was prepared by combination of anionic living polymerization of hexamethylcyclotrisiloxane (D3) and cationic polymerization of 2-methyl oxazoline, using difunctional initiator. Polymer was recovered in cold acetone, wash couple of times with cold acetone to remove the unreacted monomer and other side products.

### Characterization:

**Central 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 indice were calculated.

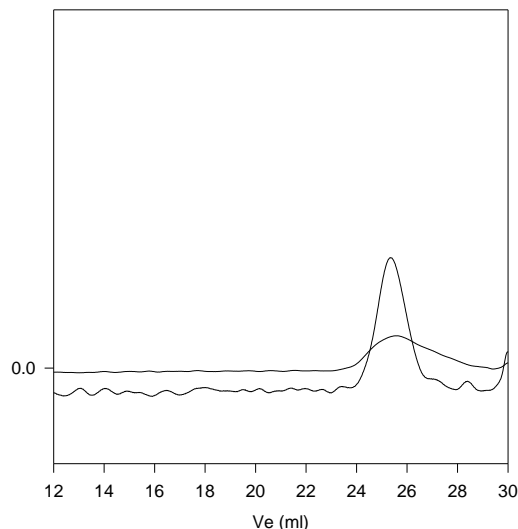
**Side Block:** The chemical composition was extracted from proton NMR, which was recorded from Varian 500MHz instrument using CDCl<sub>3</sub> as solvent. The molecular weight of side block was calculated based on the molecular weight of central block and the chemical composition. The polydispersity index of block copolymer was obtained by SEC as described above.

The reaction of polymerization can be illustrated as follows:



### SEC of Sample:

**P3717B-MOXZDMSMOXZ**



Size exclusion chromatography of poly(methyloxazoline-b-dimethylsiloxane-b-methyloxazoline)

— Polydimethylsiloxane M<sub>n</sub>=2500, M<sub>w</sub>=3200, PI=1.3

— Triblock copolymer: Strong interaction with the column packing materials in THF as eluent

Composition from <sup>1</sup>H NMR: MOXZ-b-DMS-b-MOXZ

Mn: 1300-b-2500-b-1300 Mw/Mn 1.3

degree of polymerization: **MOXZ<sub>(15)</sub>-b-DMS<sub>(33)</sub>-b-MOXZ<sub>(15)</sub>**

### <sup>1</sup>H NMR of the Polymer:

