

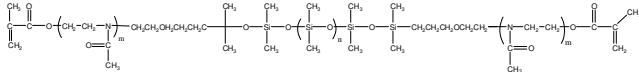
Sample Name:

## Methacrylate End Functionalized Poly(2-methyloxazoline-b-dimethylsiloxane-b-2-methyloxazoline) Triblock Copolymer

Sample #:

**P18536A-MAMOXZDMSMOXZMA**

Structure:



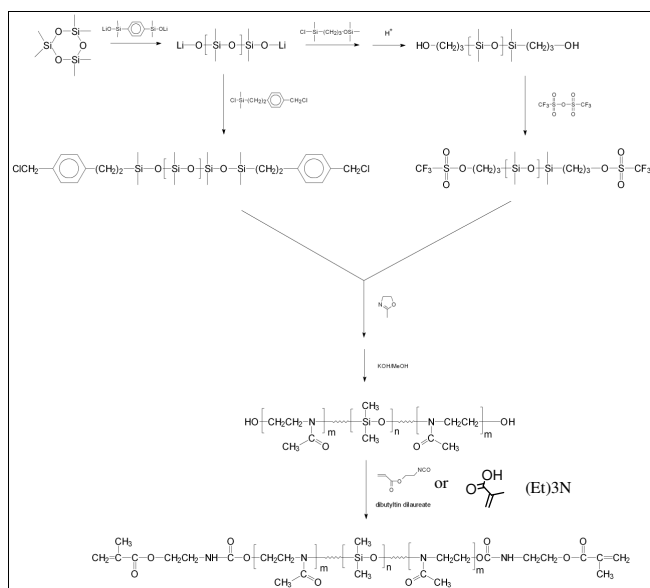
Composition:

Mn x 10 <sup>3</sup> (g/mol)	M <sub>w</sub> /M <sub>n</sub>
1.5-b-5.0-b-1.5	1.3

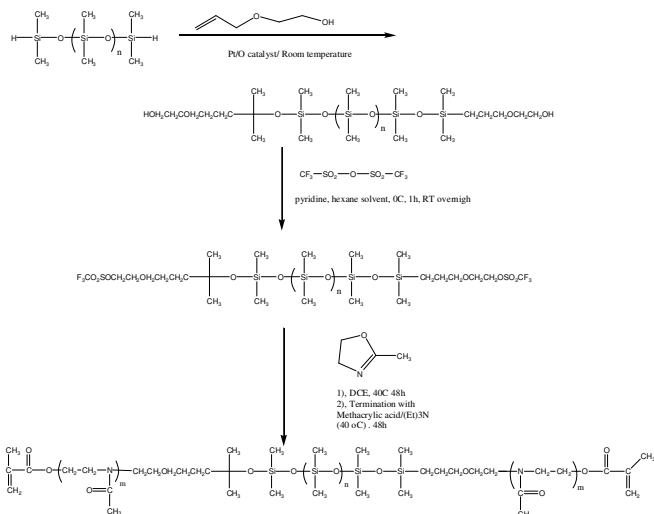
Synthesis:

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. The methacryloyl end-group functionalization was achieved quantitatively by terminating reaction with methacrylic acid in the presence of triethyl amine. The termination reaction was carried out at 40°C for 3 days. Polymer was recovered in cold acetone and washed a few times with cold acetone to remove the unreacted methacrylic acid and other side products.

The reaction of polymerization can be illustrated as follows:



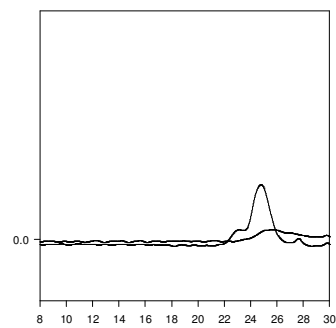
or :



### Characterization: SEC and <sup>1</sup>H NMR

The block copolymer could not be eluted in our SEC, the composition of the block copolymer was determined from the <sup>1</sup>H NMR by knowing the molecular mass of the starting PDMS dicarbinol terminated PDMS: Mn 2500

**P18536-MOXZDMSMOXZ**



Size exclusion chromatography of poly(methyloxazoline-b-dimethylsiloxane-b-methyloxazoline) End functionalized with methacrylate unit  
Polydimethylsiloxane M<sub>n</sub>=5000, M<sub>w</sub>=6200, PI=1.25  
Triblock copolymer: could not be eluted THF as eluent  
Composition from <sup>1</sup>H NMR: MOXZ-b-DMS-b-MOXZ  
Mn: 1500-b-5000-b-1500  
degree of polymerization: MOXZ<sub>(18)</sub>-b-DMS<sub>(67)</sub>-b-MOXZ<sub>(18)</sub>

