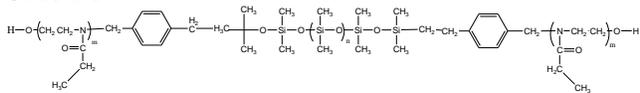


Sample Name:

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

Sample #: **P9181-EtOXZDMSEtOXZ**

Structure:



Composition:

Mn x 10 ³	PDI
1.1-b-4.0-b-1.1	1.5
Dp of each units: (11-b-54-b-11)	

Synthesis Procedure:

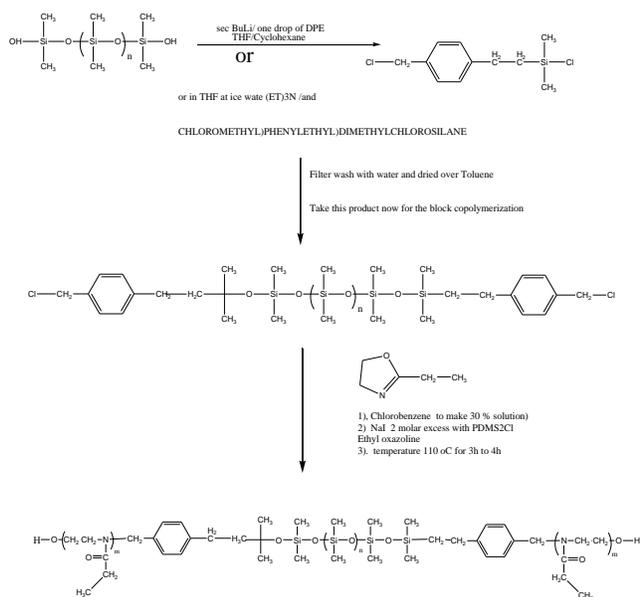
The α - ω dihydroxy terminated Poly(2-ethylloxazoline-b-dimethylsiloxane-b-2-ethylloxazoline) triblock copolymer was prepared by combination of anionic living polymerization of hexamethylcyclotrisiloxane (D3) and cationic polymerization of 2-ethyl oxazoline, using difunctional initiator. Polymer was treated with equivalent amount of end functional moieties with NaOH/Methanol. Polymer was recovered in cold acetone, wash couple of times with cold acetone to remove the unreacted any trace amount of monomer.

Characterization:

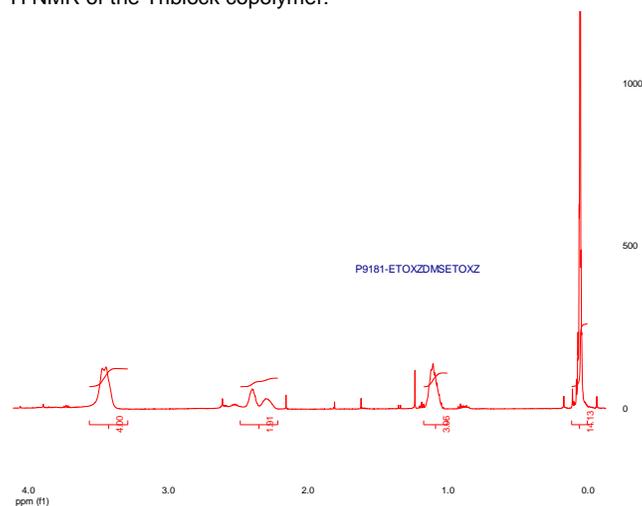
Central Block: Size exclusion chromatography (SEC):

Varian liquid chromatograph equipped with UV and refractive detector. SEC columns from Supelco were used with THF. The chemical composition was extracted from proton NMR, which was recorded from Varian 500MHz instrument using CDCl₃ as solvent.

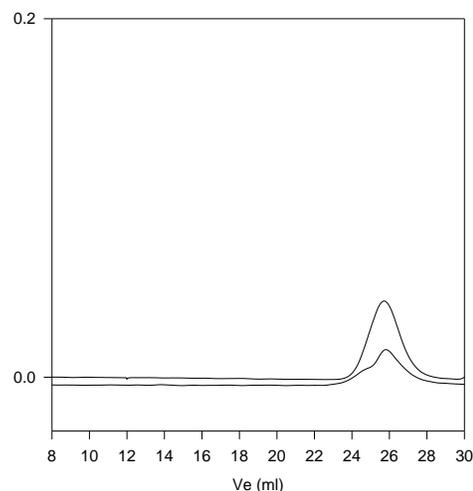
The reaction of polymerization can be illustrated as follows:



H NMR of the Triblock copolymer:



P9181-EtOXZDMSEtOXZ



Size exclusion chromatography of the polymer

— Polydimethyl siloxane disilanol $M_n=4000$, $M_w=5400$, $M_w/M_n=1.3$

— Poly(ethylloxazoline-b-dimethyl siloxane-b-ethyl oxazoline) end Functionalized with Acrylate unit
Mn: PEtOXZ(1100)-b-PDMS(4000)-b-PEtOXZ(1100) $M_w/M_n=1.5$

FTIR Spectra of the Products;

1. PDMS α - ω -disilanol terminated.
2. PDMS- α - ω - dibenzyl chloride terminated PDMS
3. EtOXZ-DMS-EtOXZ triblock copolymer

