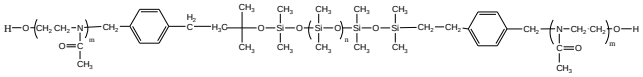
Sample Name:

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

Sample #: **P8662-MOXZDMSMOXZ**

Structure:



Composition:

Mn x 10^3	PDI
2.0-b-4.0-2.0	--

Synthesis Procedure:

The α–ω 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 un reacted monomer and other side products.

For Further details see our following reference:

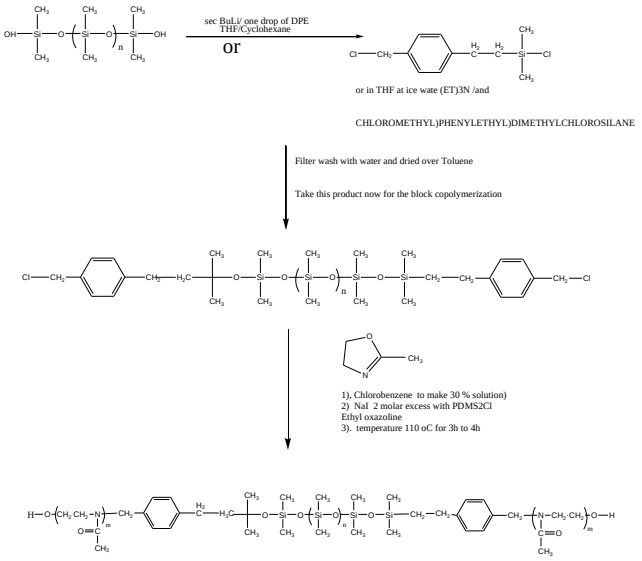
J.X. Zhang, S.K. Varshney, "Simple Approach for the Scale-up Production of Block Copolymer of Polydimethylsiloxane with (Meth)acrylic Ester Monomers" Designed Monomers and Polymers, 2002, 1, 79.

Characterization:

Size exclusion chromatography (SEC): Varian liquid chromatograph equipped with UV and refractive detector. SEC columns from Supelco were used with THF (or toluene) 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 $CDCl_3$ as solvent. The molecular weight of side block was calculated based on the molecular weight of centeral 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:

The block copolymer can not be eluted in our SEC, rthe composition of the block copolymer was determined from the HNMR by knowing the molecular mass of the starting PDMS dicarbinol terminated PDMS: Mn 4000

The composition was;

(24) methyloxazoline-b-(54) PDMS-b-(24) methyloxazoline

HNMR of the Polymer: