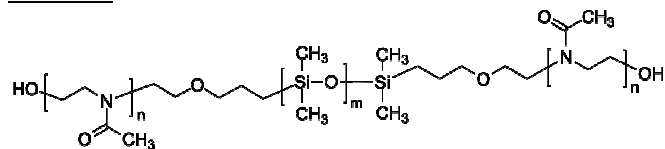


**Sample Name:** Poly(2-methyloxazoline)-*b*-poly(dimethyl siloxane)-*b*-poly(2-methyloxazoline),  $\alpha,\omega$ -bis(hydroxy)-terminated triblock copolymer with propylethoxy linkers between blocks.

**Sample #** P8666-MOXZDMSMOXZ

**Structure:**



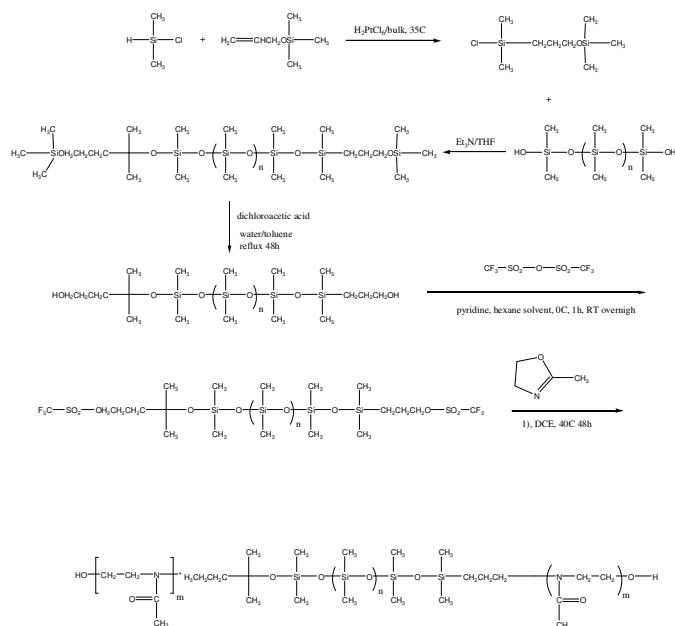
**Composition:**

$M_n \times 10^3$ (g/mol) [PMOXZ-PDMS-PMOXZ]	$M_w/M_n$
1.7-4.0-1.7	1.29

Glass transition temperature ( $T_g$ ):	62 °C
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**Synthesis procedure:**

The  $\alpha,\omega$ -bis(hydroxy)-terminated poly(2-methyloxazoline-*block*-dimethylsiloxane-*block*-2-methyloxazoline) triblock copolymer was prepared by combination of anionic living polymerization of hexamethylcyclotrisiloxane and cationic polymerization of 2-methyloxazoline using difunctional initiator (the scheme of reaction is presented below). The product was precipitated in cold acetone, washed a few times with the cold acetone to remove the traces of monomers and by-products, and dried at reduced pressure.

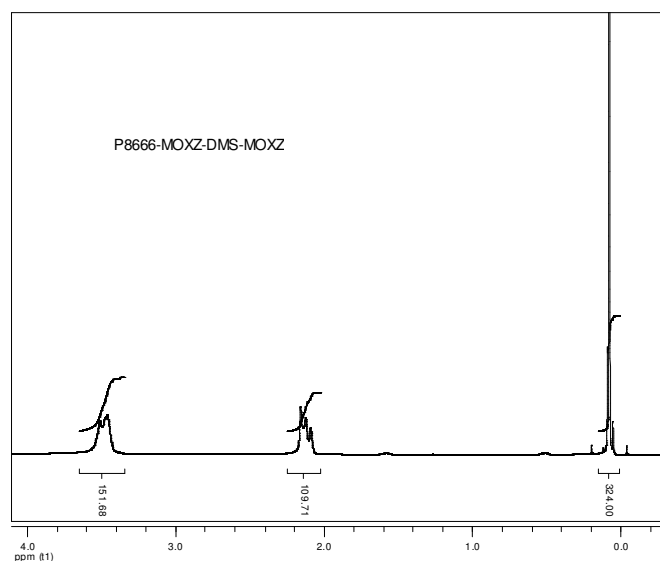


**Characterization:**

The molecular weight and polydispersity index ( $M_w/M_n$ ) of the central (PDMS) block and polydispersity index of the final triblock copolymer were determined by size exclusion chromatography (SEC) using THF or DMF as an eluent. SEC was performed on liquid chromatograph equipped with a Viscotek triple detector and two Supelco columns, which were calibrated with monodisperse poly(dimethyl siloxane). The molecular weight of the side blocks (PMOXZ) was calculated from  $^1\text{H}$  NMR data of triblock copolymer using  $M_n$  value for the central block (dicarbinol-terminated PDMS) obtained by SEC. NMR analysis was performed on Varian 500MHz NMR spectrometer using  $\text{CDCl}_3$  solvent.

Thermal analysis of the triblock copolymer was performed on TA Instruments Q100 differential scanning calorimeter (DSC) under a nitrogen atmosphere. The glass transition temperature ( $T_g$ ) of the polymer was measured at a scan rate of 10°C/min shortly after creating thermal history of the sample; and determined as a midpoint of step change in heat flow curve for the second heating scan.

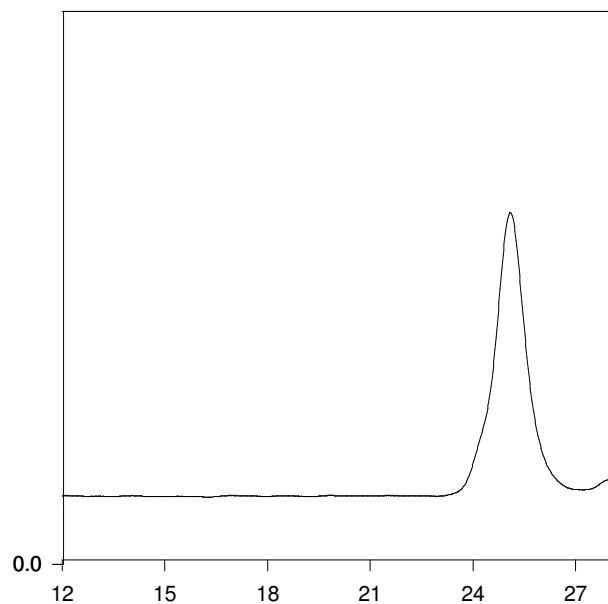
**$^1\text{H}$  NMR spectrum of the triblock copolymer in  $\text{CDCl}_3$ :**



Degree of polymerization: MOXZ(20)-DMS(54)-MOXZ(20).

SEC elugram of the polymer:

**P8666-MEOXZDMSMEOXZ**



Size exclusion chromatography of the polymer: run in DMF at 60 °C

..... MEOXZ-Polydimethylsiloxane-MEOXZ  $M_n = 1,700$ - $b$ - $4,000$ - $1,700$ ,  $PI=1.29$

**DSC thermogram of the PMOXZ-b-PDMS-b-PMOXZ triblock copolymer (2<sup>nd</sup> heating scan, 10°C/min):**

Sample: P8666\_MOXZ-DMS-MOXZ  
Size: 14.5000 mg

File: P8666 MOXZDMSMOXZ.002

