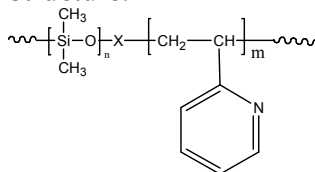


**Sample Name:** Poly(2-vinyl pyridine-b-dimethylsiloxane)

**Sample #:** P5302-2VPDMS

**By anionic polymerization using EO as end capping of Poly 2VP macroanions**

**Structure:**



**Composition:**

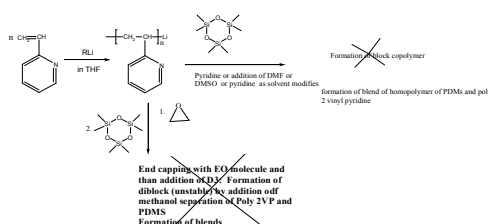
$M_n \times 10^3$ 2VP-b-DMS	Mw/Mn
2.0-b-1.5	1.25

**Synthesis Procedure:**

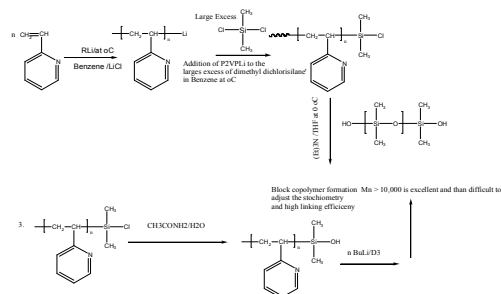
Poly(2-vinyl pyridine-b-dimethylsiloxane) is synthesized by one of the following routes.

Different routes for the synthesis of poly 2 vinyl pyridine with polydimethyl siloxane:

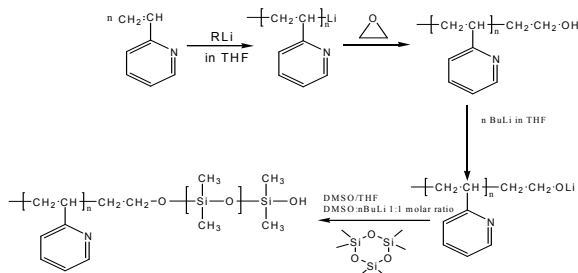
1. Direct Anionic Polymerization by sequential addition of 2VP followed by D3 monomer



2. From the linking reaction of end functionalized polymer: For the synthesis of Block copolymer > Mn 10,000

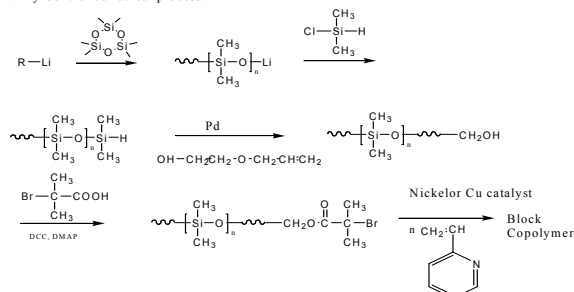


3. Formation of first Poly 2vinyl pyridine OH terminated polymer than reacting the isolated P2VPOH polymer with a BuLi followed by addition of D3 in the presence of DMSO equimolar amount with nBuLi



High purity diblock copolymer formation

4. By Controlled radical process:

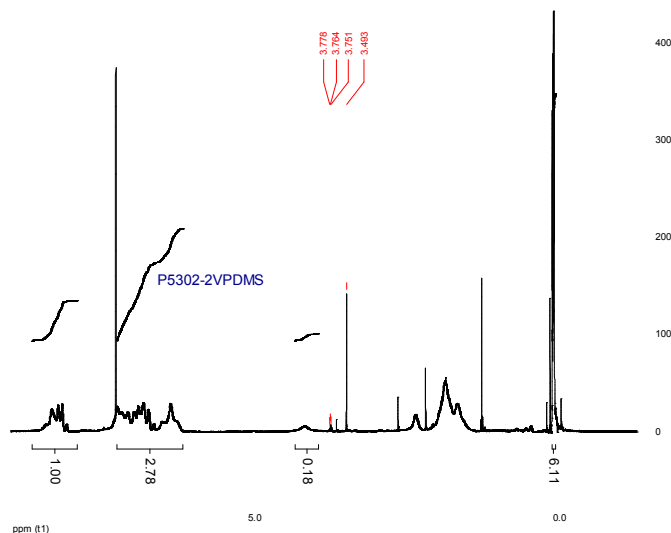


**Characterization:**

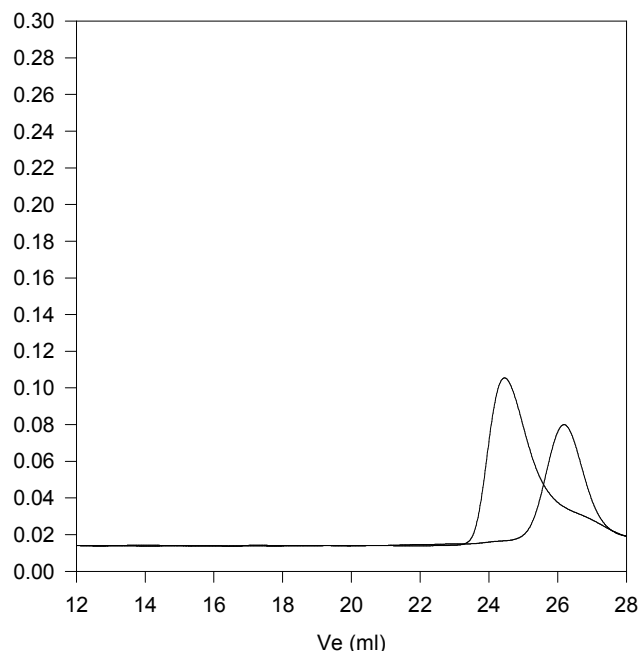
Polymers were analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The block copolymer composition was then calculated from  $^1\text{H-NMR}$  spectroscopy by comparing the peak area of the 2-vinyl pyridine proton at about 8.2 ppm with the dimethyl siloxane protons at 0.08 ppm. Copolymer PDI is determined by SEC.

**Solubility:**

Poly(2-vinyl pyridine-b-dimethyl siloxane) is soluble in THF,  $\text{CHCl}_3$  and toluene.



**P5302-2VPDMS**



Size exclusion chromatography of

— Poly(dimethylsiloxane),  $M_n=2000$  Mw: 2100 Mw/Mn 1.09  
— Block Copolymer P2VP(2000)-b-PDMS(1500), PI= 1.25  
Composition for  $^1\text{H}$  NMR