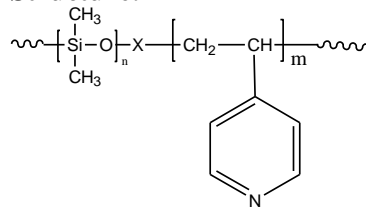


**Sample Name:** Poly(4-vinyl pyridine-b-dimethylsiloxane)

**Sample #:** P40476-4VPDMS

**Structure:**



**Composition:**

|                                |       |
|--------------------------------|-------|
| $M_n \times 10^3$<br>4VP-b-DMS | Mw/Mn |
| 23.5-b-5.0                     | 1.2   |

**Synthesis:**

Poly (4-vinyl pyridine-b-dimethylsiloxane) was synthesized by RAFT Process.

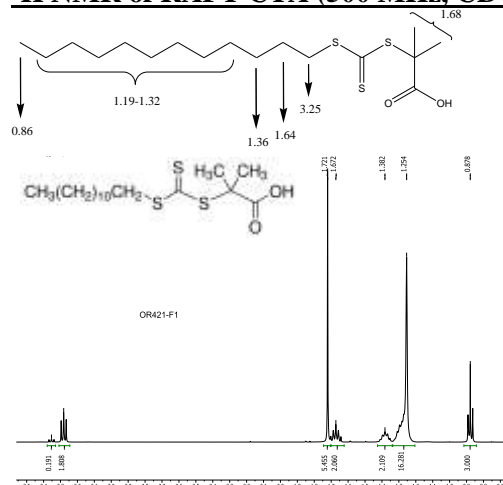
**Characterization:**

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.

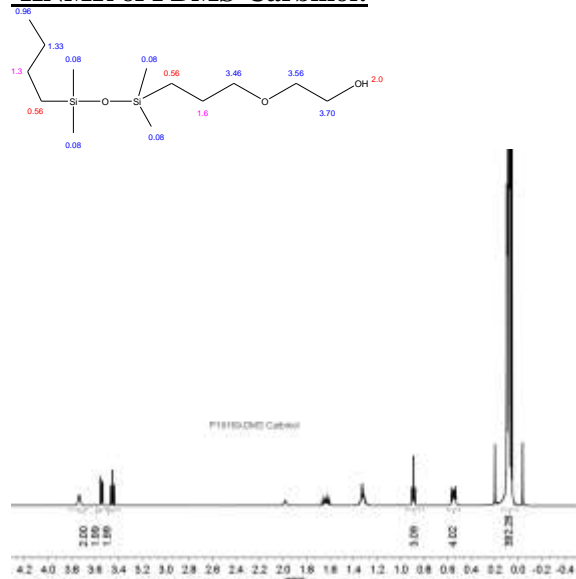
**Solubility:**

Poly(4-vinyl pyridine-b-dimethyl siloxane) is soluble in THF,  $\text{CHCl}_3$  and toluene.

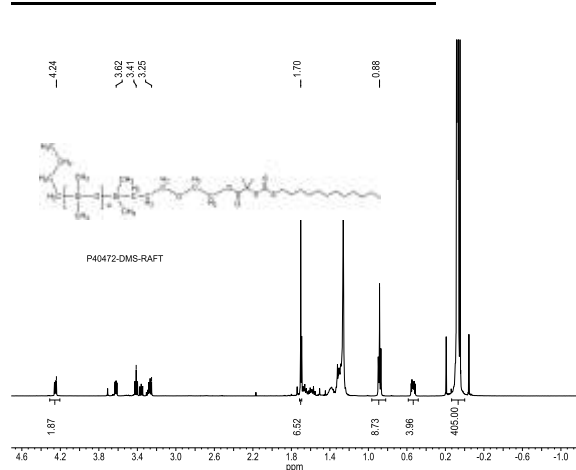
**$^1\text{H}$  NMR of RAFT CTA (500 MHz,  $\text{CDCl}_3$ ):**



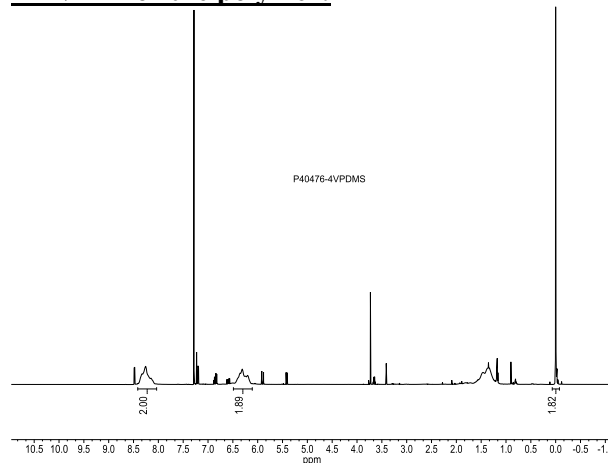
**$^1\text{H}$ NMR of PDMS-Carbinol:**



**$^1\text{H}$ NMR of PDMS macroinitiator:**



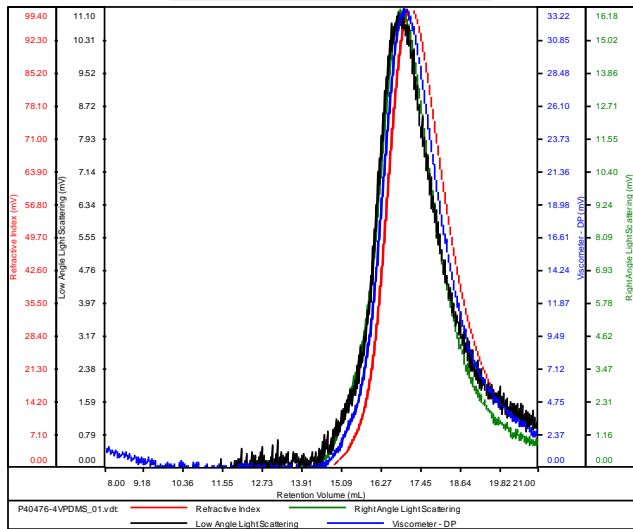
**$^1\text{H}$ NMR for the polymer:**



SEC elugram of the Polymer:

P40476-4VPDMS

|          |                              |
|----------|------------------------------|
| ID       | P40476-4VPDMS                |
| Conc     | 12.2991                      |
| Recovery | 1229.9131                    |
| dn/dc    | 0.1150                       |
| Method   | PS80k_December-2016-0004.vcm |



**FTIR:** The Composition of the polymer was also checked by FTIR.

Relationship between weight fraction & FTIR peak area of 2VP in DMS

