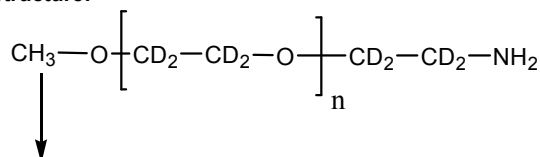


### Sample Name:

**$\alpha$ -methoxy  $\omega$ -amino Terminated Deuterated (d4) Poly(ethylene glycol)**

**Sample #: P11448-dPEO-OCH3NH2**

### Structure:



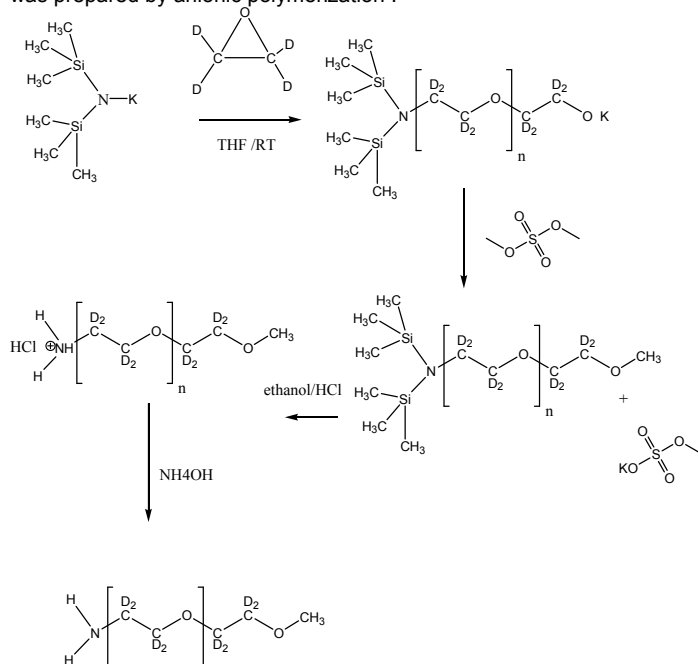
Protonated

### Composition:

Mn x 10 <sup>3</sup>	PDI	NH2 functionality
5.0	1.17	>99%

### Synthesis Procedure:

Amino terminated deuterated Poly(ethylene glycol methyl ether) was prepared by anionic polymerization.



### Characterization:

The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. Polymer functionality was verified by oxidation of the thiol to disulfide.

### Solubility:

Polymer is soluble in water, methanol and ethanol, THF,  $\text{CHCl}_3$ . It is precipitated out from cold hexane and ether.

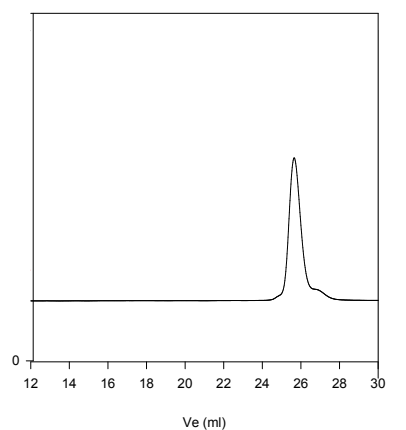
### Purification of the obtained polymer:

Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the any side product: After neutralization with  $\text{NH}_4\text{OH}$  the crude polymer purified as follows:

1. Dissolved the polymer in de-ionized distilled water to remove the any insoluble organic catalyst side product.
2. Polymer extracted from water with dichloromethane.
3. Polymer solution in dichloromethane was dried over anhydrous sodium sulfate.
4. Solution filtered and then passed through a column packed with basic  $\text{Al}_2\text{O}_3$ .
5. Solution concentrated on rota-evaporator
6. Solution precipitated in cold diethyl ether.
7. Dried under vacuum for 12h at  $30^\circ\text{C}$ .

### SEC of Sample:

**P11448-dPEO-OCH3NH2**



Size exclusion chromatograph of Amino terminated deuterated Poly(ethylene glycol)Methylether (NH2 group was protected with naphthyl isocyanate) for the purpose of analysis in THF at  $35^\circ\text{C}$ :

$M_n=5000$ ,  $M_w=5800$ ,  $PI=1.17$ ; NH2 functionality over 99%

### HNMR of the polymer:

