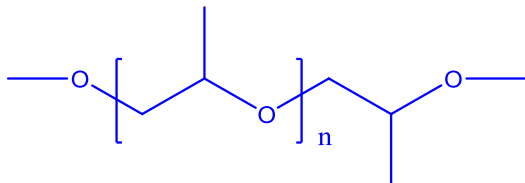


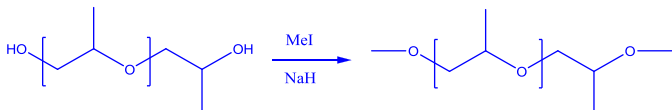
**$\alpha,\omega$ - di methoxy terminated-polypropylene  
oxide or  
Poly propylene glycol dimethyl ether**

**Structure:**



Mn x 10 <sup>3</sup>	PDI
0.8	1.10

Polypropylene oxide is synthesized by anionic polymerization of propylene oxide as illustrated in the reaction scheme below

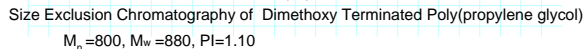


The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography.

Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Polymer was stirred in de-ionized distilled water to remove the any soluble 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. Dried under vacuum for 48h at 38 oC.

**P6600-PO2OCH3**



<sup>1</sup>H NMR spectrum of P6600-PO<sub>2</sub>OCH<sub>3</sub>. The x-axis represents chemical shift in ppm (f1), ranging from 4.50 to 1.00. The spectrum shows two main signals: a multiplet at approximately 3.5 ppm and a sharp singlet at approximately 1.1 ppm. Integration values are provided below the peaks: 13.17 for the multiplet and 38.60 for the singlet. Peak labels at the top indicate specific chemical shifts: 3.565, 3.544, 3.370, 3.371, 1.141, 1.141, 1.139, and 1.123.