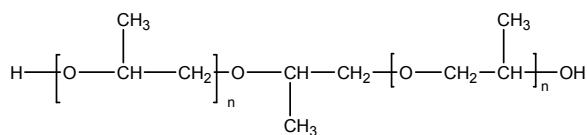


### Sample Name:

**$\alpha,\omega$ - dihydroxy terminated-polypropylene oxide or Poly propylene glycol**

Sample #: P6654-PO2OH

### Structure:

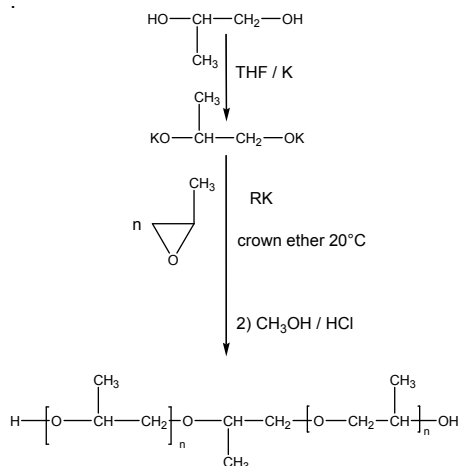


### Composition:

Mn x 10 <sup>3</sup>	PDI
3.0	1.07

### Synthesis Procedure:

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



### Characterization:

By Size exclusion chromatography (SEC): Varian liquid chromatograph equipped with UV and refractive detector. SEC columns from Supelco were used with THF containing 2 vol% (Et)<sub>3</sub>N as the eluent. The molecular weights were determined using light scattering detector and viscosity detector. The molecular weights and the polydispersity indice were calculated.

### Purification of the obtained polymer:

The reaction mixture is filtered to remove the precipitated KCl after which the solvent is removed under reduced pressure. The polymer is then re dissolved in iso-octane, and recover after keeping the solution at -10 oC.

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

1. Dissolved the polymer in dichloromethane and wash with water.

2. Polymer solution in dichloromethane was dried over anhydrous sodium sulfate.
3. Solution filtered and then passed through a column packed with basic Al<sub>2</sub>O<sub>3</sub>.
4. Solution concentrated on rota-evaporator
5. Solution precipitated in cold iso-octane at -20 oC.
6. Dried under vacuum for 48h at 38 oC.

### SEC of Homopolymer:

**P6654-PO2OH**

