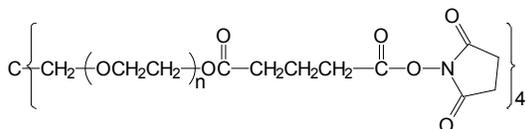


**Sample Name:**  
**Four-Arm Poly(ethylene oxide)**  
**Succinimidyl Glutarate Terminated,**  
**Pentaerythritol Core**

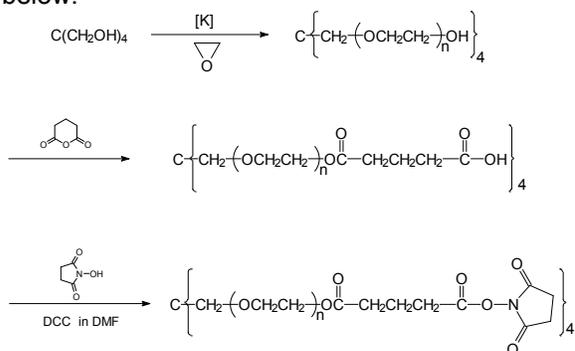
**Sample #:** P10811-4EOSG



$M_n \times 10^3$ (total)	PDI
2.3	1.13

**Synthesis Procedure:**

The scheme of the reaction is illustrated 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%  $(Et)_3N$  as the eluent. The molecular weights were determined using light scattering detector and viscosity detector. The molecular weights and the polydispersity indice were calculated.

An aqueous GPC column from Supelco(G5000 PWXL) was also used with 0.5 M acetic acid and 0.8 M  $NaNO_3$  as the eluent. It was kept at a constant temperature of  $50^\circ C$ . The flow rate was 1.0 ml/min. The column was calibrated with monodisperse poly(ethylene oxide) standards. The molecular weights and the polydispersity index of polyethylene oxide were calculated by using a Visual Basic GPC software.

**Purification of the obtained polymer:**

Purification of the obtained four arm polyethylene oxide was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Dissolved the polymer in DCM to remove the any insoluble organic catalyst side product.
2. Polymer solution in dichloromethane was dried over anhydrous sodium sulfate.
3. Solution filtered and then passed through a column packed with basic  $Al_2O_3$ .
4. Solution concentrated on rota-evaporator.
5. Solution precipitated in cold diethyl ether.
6. Dried under vacuum for 48 h at  $38^\circ C$ .

**Solubility:**

Polymer is soluble in Water and clear solution.

**NMR of the product**

