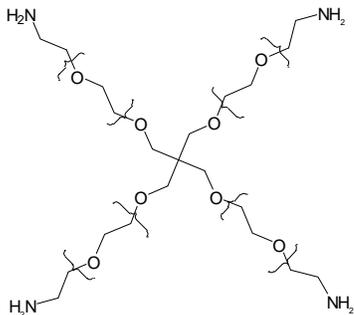


**Sample Name: Four-arm Amino-terminated Poly(Ethylene Oxide)**

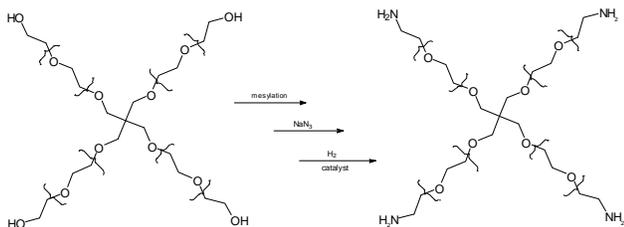
**Sample #: P2979-4EONH2**



Mn x 10 <sup>3</sup> (total)	PDI
10.0	1.08

**Synthesis Procedure:**

The polymer was synthesized by anionic living polymerization of ethylene oxide using pentaerythritol potassium salt as an initiator. A scheme of the reaction is presented below:



**Characterization.**

By <sup>1</sup>H NMR and size exclusion chromatography.

Varian liquid chromatograph equipped with UV and refractive detector, SEC columns from Supelco, and THF (eluent) containing 2 vol% (Et)<sub>3</sub>N were used. The molecular weights were determined using light scattering detector and viscosity detector.

An aqueous GPC column from Supelco(G5000 PWXL) was also used with 0.5 M acetic acid and 0.8 M NaNO<sub>3</sub> as an eluent. The constant temperature of 50°C was kept during the experiment. 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 polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. polymer was dissolved in de-ionized distilled water to remove the any insoluble organic catalyst side product;
2. polymer was extracted from water with dichloromethane;
3. polymer solution in dichloromethane was dried over anhydrous sodium sulfate;
4. solution was filtered and then passed through a column packed with basic Al<sub>2</sub>O<sub>3</sub>;
5. solution was concentrated on rotary evaporator;
6. solution was precipitated into cold diethyl ether;
7. product was dried under reduced pressure at 38°C for 48 h.

**Solubility:**

The polymer is soluble in toluene, THF, water and CHCl<sub>3</sub>. The polymer is insoluble in hexane, ether, cold isopropanol and ethanol.

**Functionality:**

The amino functionality was titrated by HClO<sub>4</sub> using violet crystal as indicator.

**<sup>1</sup>H NMR of the product:**

