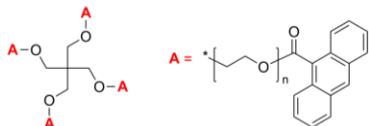


Sample Name:

**Poly(ethylene oxide), (anthracen-9-yl)-terminated 4-arm star polymer / Core: pentaerythritol**

Sample #: **P44314B-4EOAn**

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> (total)	Mn x 10 <sup>3</sup> (Each Branch)	PDI
20.0	5.0	1.08
Functionality >94%		

**Synthesis Procedure:**

The polymer was prepared by anionic living polymerization of ethylene oxide using pentaerythritol potassium salt as the initiator. OH end groups were modified to its ester by reaction with 9-anthracenyl acid chloride

**Characterization:**

The product was characterized by size exclusion chromatography (SEC) and <sup>1</sup>H NMR data analysis.

**Purification of the obtained polymer:**

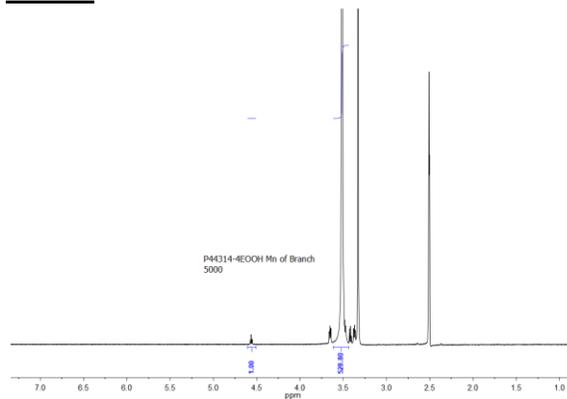
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. 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. The polymer solution in dichloromethane was dried over anhydrous sodium sulfate.
4. Solution filtered and then passed through a column packed with basic Al<sub>2</sub>O<sub>3</sub>.
5. Solution concentrated on rota-evaporator.
6. Solution precipitated in cold diethyl ether.
7. Dried under vacuum for 48h at 38 °C.

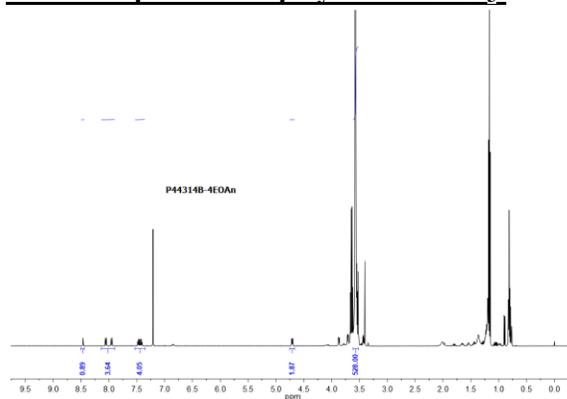
**Solubility:**

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

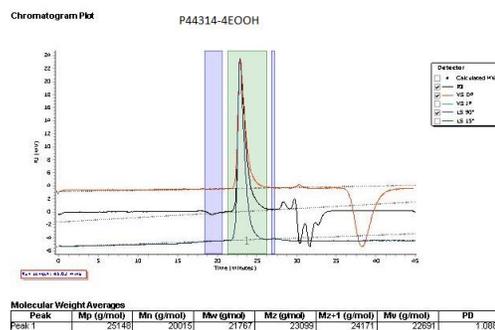
**<sup>1</sup>H NMR spectrum of polymer 4EOOH run in DMSO:**



**<sup>1</sup>H NMR spectrum of polymer in CdCl<sub>3</sub>:**



**SEC profile of the polymer:**



Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PDI
Peak 1	25146	20015	21101	23055	24171	22951	1.088