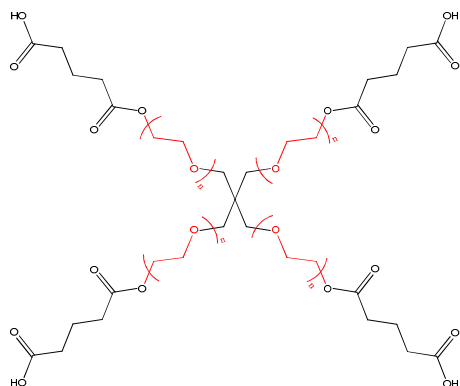


Sample Name: **P2938-4EOCOOH**

**Four-Arm Poly(ethylene oxide) Carboxy Terminated, Pentaerythritol Core**



Mn x 10 <sup>3</sup> (total)	PDI	_COOH Functionality
10.0	1.10	>99%

**Synthesis Procedure:**

Four arms OH terminated polymer was prepared by anionic living polymerization of ethylene oxide using pentaerythritol potassium salt as the initiator.

**Characterization:**

The polymer was characterized by SEC and <sup>1</sup>H NMR

**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. Polymer solution in dichloromethane was dried over anhydrous sodium sulfate.
4. Solution filtered and than 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 oC.

**Solubility:**

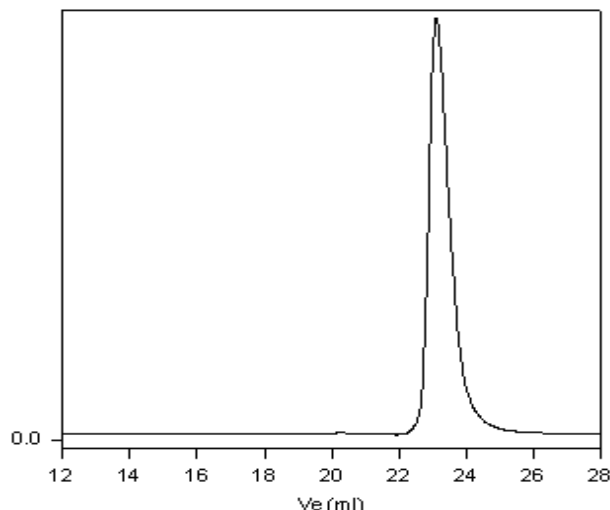
Polymer is soluble in THF, water and CHCl<sub>3</sub>. The polymer is insoluble in hexane, ether, cold isopropanol and cold ethanol.

**Functionality:**

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

**SEC elugram of the polymer**

**P2948-4EO Before reation**



Size Exclusion Chromatogram of Four-Arm Poly(ethylene glycol) (before reacting with succinic anhydride).

— P2948-4EO: M<sub>n</sub>=10000, M<sub>w</sub>=11000, M<sub>w</sub>/M<sub>n</sub>=1.10

**<sup>1</sup>H NMR analysis of polymer**

