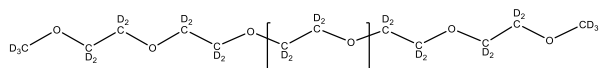


Sample Name:

**Deuterated Poly(ethylene glycol-d4) dimethyl ether, completely deuterated**

Sample #: **P42948-d4EG2OCD<sub>3</sub>**

**Structure:**

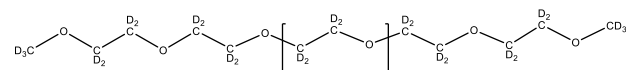
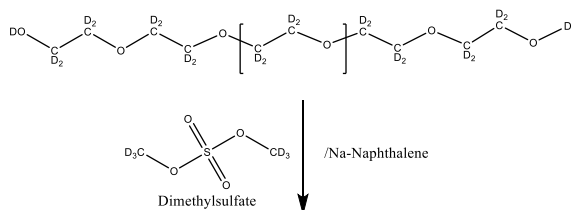


**Composition:**

Mn x 10 <sup>3</sup>	PDI
1.7	1.07

**Synthesis Procedure:**

The following reaction scheme shows how the product was prepared.



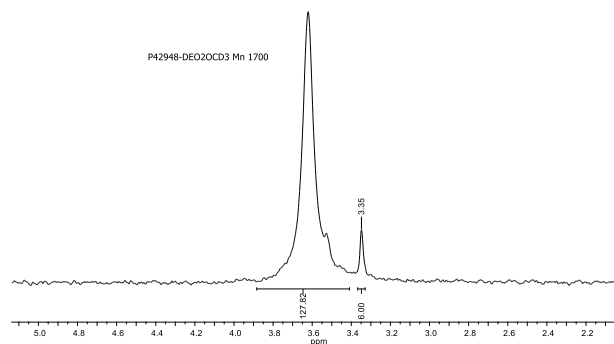
**Characterization:**

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

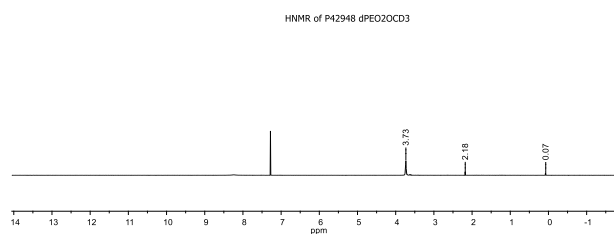
**Purification:**

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 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.

**D-NMR spectrum of the Dimethoxy dPEG:**



**<sup>1</sup>H-NMR spectrum of the Dimethoxy dPEG:**



**SEC elugram of the polyethylene oxide standards:**

SEC of selected Polyethylene oxide standard

