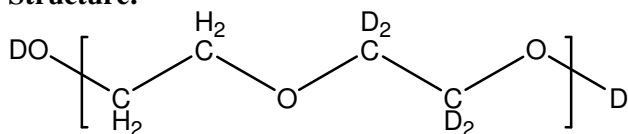


Sample Name:

**Random copolymer of Deuterated Poly(ethylene oxide) and protonated poly(ethylene oxide)**

Sample #: **P40109-dPEOHPEOran**

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup>	PDI
35.0	1.2
dEO:HEO ratio	52:48

**Characterization:**

The polymer was characterized by SEC, <sup>1</sup>H NMR, DNMR.

**Solubility:**

Poly(ethyl glycol) is soluble in water, ethanol, methanol.

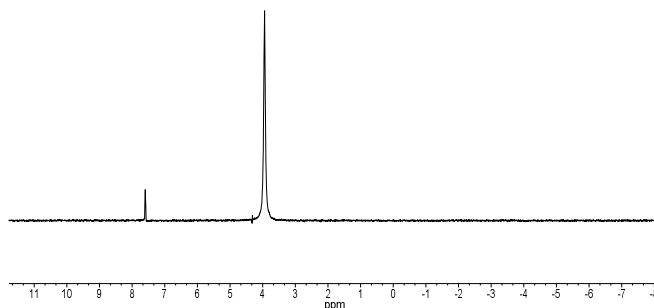
**Purification of the obtained polymer:**

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

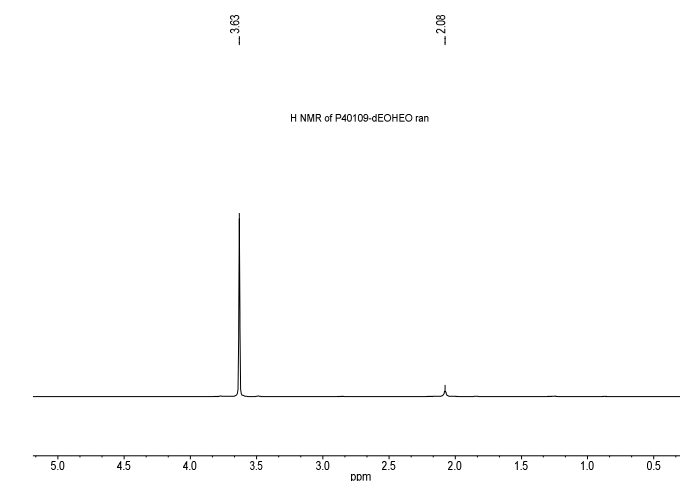
1. Dissolved the polymer in de-ionized distilled water to remove the any insoluble organic catalyst side product.
2. Polymer extracted from water with dichloromethane.
3. Polymer solution in dichloromethane was dried over anhydrous sodium sulfate.
4. Solution filtered and than passed through a column 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.

**D NMR spectrum of the polymer:**

P40109-D NMR



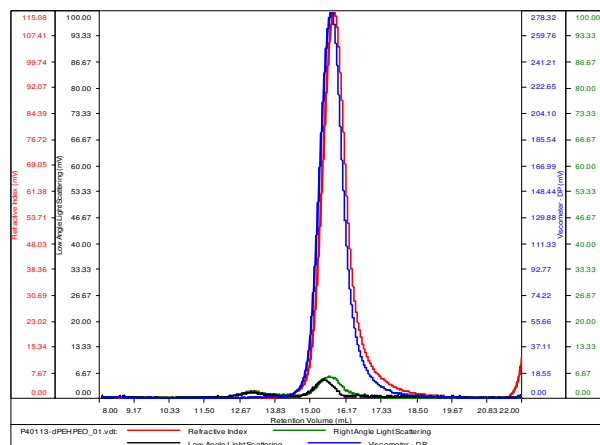
**<sup>1</sup>H NMR spectrum of the polymer:**



**SEC elugram of the polymer:**

**P40109-dPEOHPEOran**

Conc (mg/mL)	8.6704
dn/dc (mL/g)	0.0360
Method	PS80k-August-08-2016-0000.vcm
Solvent	DMF w 0.023M LiBr
Column	PSS



Sample	Mn	Mw	Mp	Mw/Mn	IV
P40113-dPEHPEO_01.vdt	34,858	42,141	32,958	1.209	0.3490