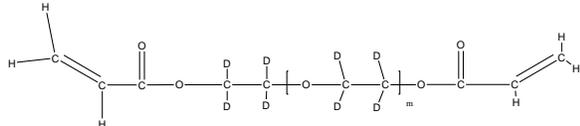


Sample Name: α - ω diacrylate terminated Deuterated Poly(ethylene glycol)

Sample #: P40580-dPEO2acrylate

Structure:



Composition:

Mn x 10 ³	PDI
2.0	1.10
Functionality >96%	

Synthesis Procedure:

Deuterated Poly (ethylene glycol) is obtained by living anionic polymerization of d4 deuterated ethylene oxide using di potassium salt of ethylene glycol. The obtained polymer was reacted with acryloyl chloride in an appropriate solvent to yield α - ω diacrylate terminated deuterated Poly (ethylene glycol).

Characterization:

The polymer was characterized by ¹H NMR and size exclusion chromatography (SEC).

Functionality: Functionality of the polymer was determined by ¹H NMR analysis or FT-IR spectroscopy.

Solubility:

Polymer is soluble in water, methanol, and ethanol, THF, CHCl₃. It is precipitated out from cold ethanol, isopropanol, hexane, and ether.

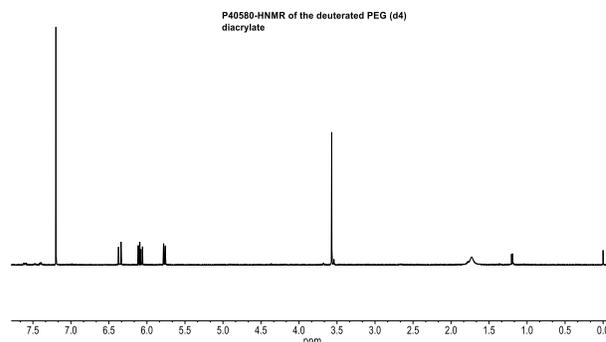
Purification of the obtained polymer:

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

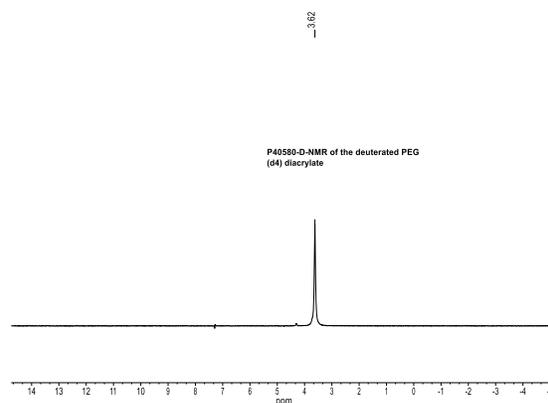
1. Dissolved the polymer in de-ionized distilled water to remove the any insoluble organic catalyst side product.
2. Polymer extracted from water with dichloromethane.
3. The polymer solution in dichloromethane was dried over anhydrous sodium sulfate.

4. Solution filtered and then passed through a column packed with basic Al₂O₃.
5. Solution concentrated on rota-evaporator.
6. Solution precipitated in cold diethyl ether.
7. Dried under vacuum for 48h at 38 °C.
8. HNMR of the PEG20h used I this synthesis

HNMR spectrum of the product:



H² NMR spectrum of the product:



SEC profile of the Sample:

