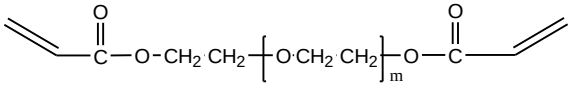
Sample Name:
Poly(ethylene glycol), α,ω-bis(acrylate)-terminated

Sample #: **P44426-EG2Acrylate**

Structure:



Composition:

Mn x 10^3	PDI
3.4	1.04
Functionality >99%	

Synthesis Procedure:
Poly (ethylene glycol) is obtained by living anionic polymerization of 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 Poly (ethylene glycol).

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

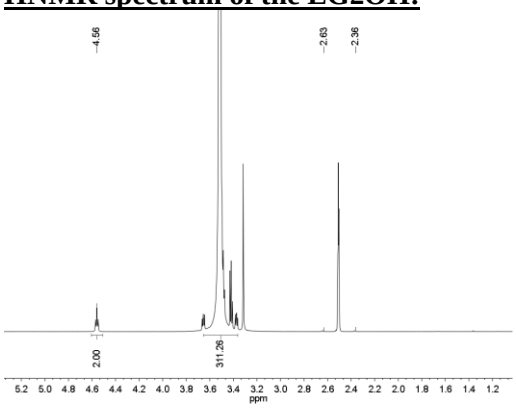
Functionality: Functionality of the polymer was determined by H NMR analysis or FT-IR spectroscopy.

Solubility: Polymer is soluble in water, methanol and ethanol, THF, $CHCl_3$. It is precipitated out from cold ethanol, isopropanol, hexane and ether.

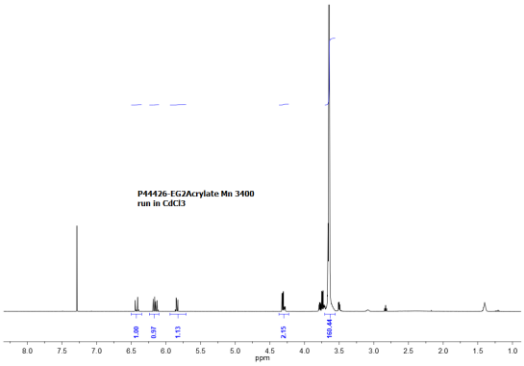
Purification of the obtained polymer:
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

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 Al_2O_3.
5. Solution concentrated on rota-evaporator.
6. Solution precipitated in cold diethyl ether.
7. Dried under vacuum for 48h at 38 °C.

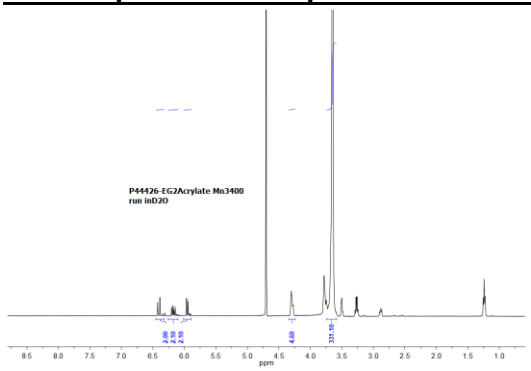
HNMR spectrum of the EG2OH:



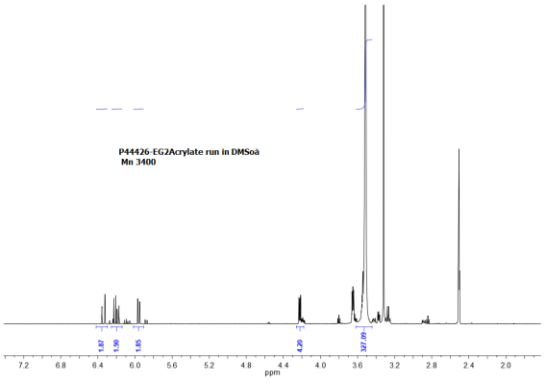
HNMR spectrum of the product run in CdCl3:



HNMR spectrum of the product run in D2O:

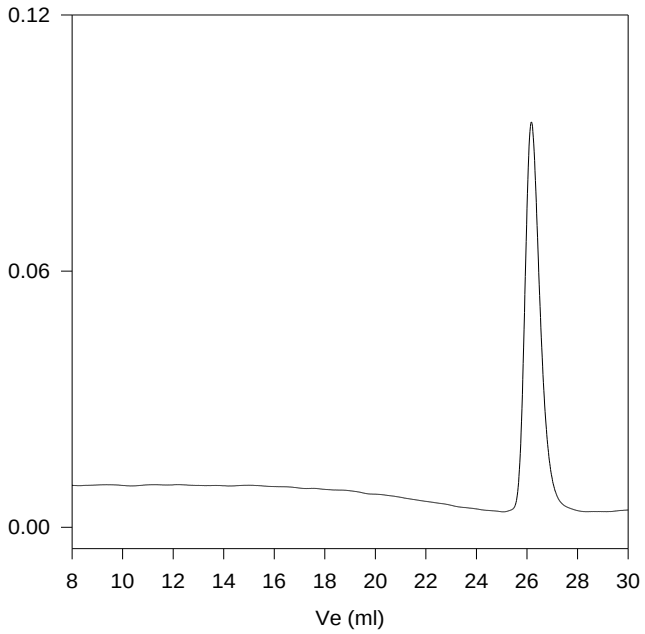


HNMR spectrum of the product run in DMSO:



SEC profile of EG2OH Sample:

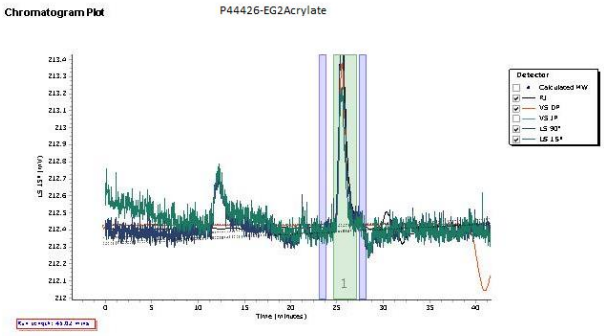
P44426-EG2OH



Size Exclusion Chromatography of Poly(ethylene glycol):

M_n=3400, M_w=3500, Mw/Mn =1.04

SEC profile of the Sample:



Molecular Weight Averages

Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	3544	3437	3455	3473	3490	0	1.005