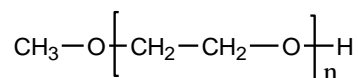


Sample Name:

Poly (ethylene glycol) methyl ether

Sample #: **P40622-EGOCH3OH**

Structure:



Composition:

$\text{Mn} \times 10^3$	PDI
11.0	1.05

Synthesis Procedure:

Poly (ethylene glycol) is obtained by living anionic polymerization reaction.

Characterization:

Polyethylene glycol was analyzed by ^1H NMR and light scattering size exclusion chromatography (SEC) to obtain molecular weight and the polydispersity index (PDI) with DMF containing 0.023M LiBr as an eluent at 50°C.

Purification of the obtained polymer:

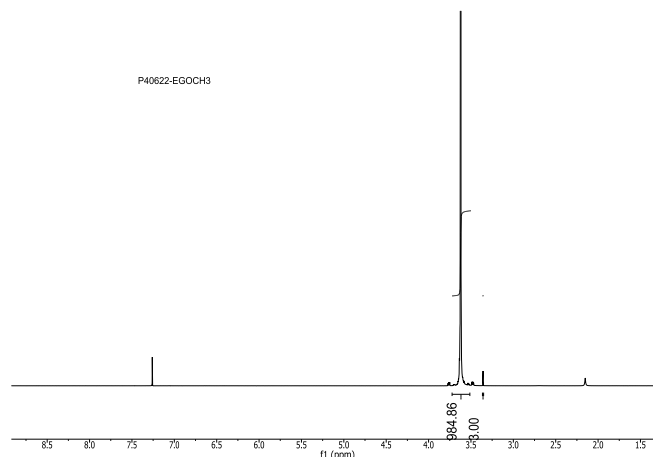
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

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_2O_3 .
5. Solution concentrated on rota-evaporator
6. Solution precipitated in cold diethyl ether.
7. Dried under vacuum for 48h at 38 oC.

Solubility:

Poly(ethyl glycol) is soluble in toluene, THF, water and CHCl_3 . The polymer is insoluble in hexane, ether, cold isopropanol and ethanol.

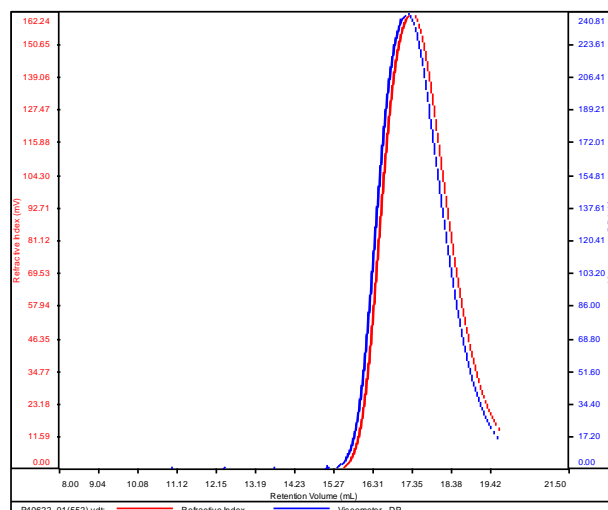
^1H NMR spectrum of the sample:



SEC of Sample of the polymer

P40622-EGOCH3

Conc	56.1017
dn/dc	0.0440
Solvent	DMF w 0.023M LiBr
Flow Rate	0.7000
Method	PS80k-May2017-0000.vcm



Sample	Mn	Mw	Mp	Mw/Mn	IV
P40622_01(552).vdt	10,802	11,228	10,137	1.039	0.0966