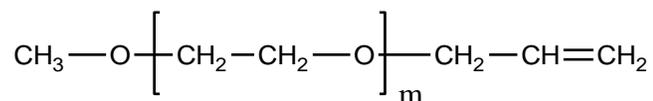


Sample Name:

## Allyl-Terminated Poly(Ethylene Glycol) Methyl Ether

Sample #: P42759-EGOCH3Allyl

**Structure:**

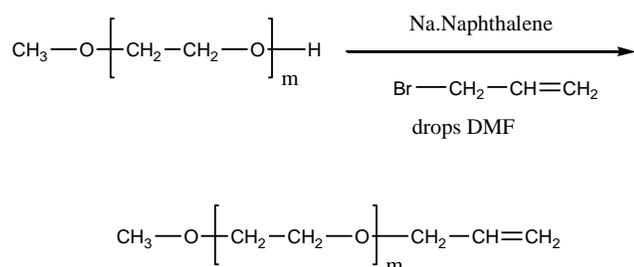


**Composition:**

|                           |      |
|---------------------------|------|
| Mn x 10 <sup>3</sup>      | PDI  |
| 0.25                      | 1.09 |
| Allyl Functionality > 90% |      |

**Synthesis Procedure:**

Allyl-terminated poly(ethylene glycol) was prepared by reaction between methoxy poly(ethylene glycol) and allylbromide with the sodium naphthalene as catalyst. The scheme of the reaction is presented below:



**Characterization:**

The molecular weight and polydispersity index of the polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. Functionality of the polymer was determined by <sup>1</sup>H NMR or FT-IR spectroscopy.

**Solubility:**

Polymer is soluble in water, methanol, ethanol, THF, CHCl<sub>3</sub>. It precipitates from cold ethanol, isopropanol, hexane and ether.

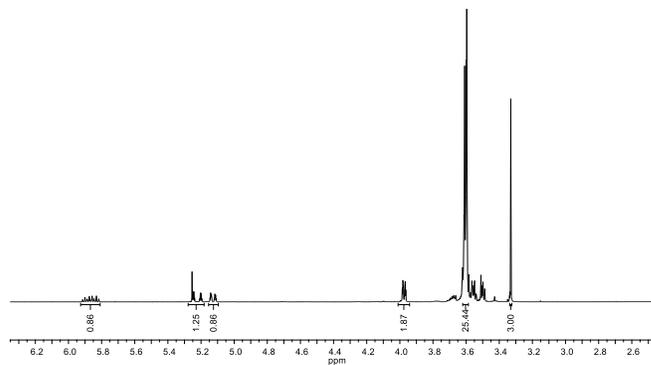
**Purification of the polymer:**

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

1. The polymer was dissolved in de-ionized distilled water to remove any insoluble organic catalyst side products.

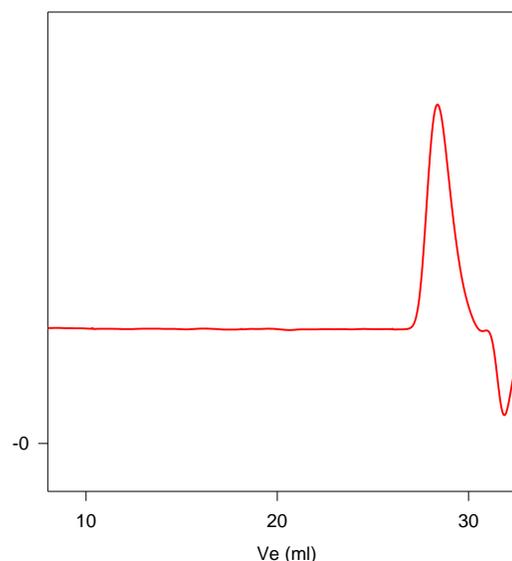
2. The polymer was extracted from water with dichloromethane.
3. Polymer solution in dichloromethane was dried over anhydrous sodium sulfate, filtered, and concentrated on rotavap.
4. The solution was precipitated in cold hexane.
5. The product was dried under reduced pressure for 48h at room temperature.

**<sup>1</sup>H-NMR (500Mhz, CDCl<sub>3</sub>) spectrum of the sample:**



**SEC elugram of the Sample:**

**P42759-EGOCH3Allyl**



Size exclusion chromatography of the product:

— Poly(ethylene glycol methyleher-Allyl) : M<sub>n</sub>=250, M<sub>w</sub>=300, M<sub>w</sub>/M<sub>n</sub>=1.09