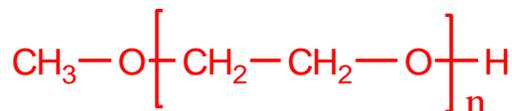


Sample Name: Poly (ethylene glycol) methyl ether or Poly ethylene oxide

Sample #: P41478-EGOCH3OH

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup>	PDI
35.0	1.03

**Synthesis Procedure:**

Poly (ethylene glycol) is obtained by living anionic polymerization and the reaction. Scheme of the polymerization is illustrated below:

**Characterization:**

The polymer was characterized by size exclusion chromatography (SEC) in DMF.

**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 °C.

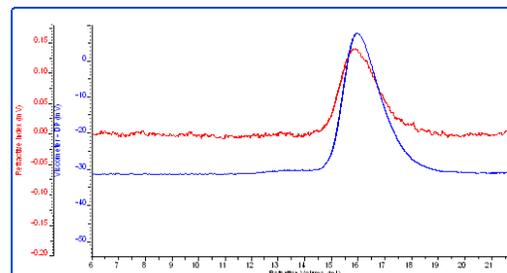
**Solubility:**

Poly (ethyl glycol) is soluble in toluene, THF, water and CHCl<sub>3</sub>. The polymer is insoluble in hexane, ether, cold isopropanol and ethanol.

**SEC elugram of the polymer:**

**P41478-EO**

dn/dc	0.0400
Flow	0.7000
Solvent	DMF with LiBr
Method	PSS



Sample	Mn	Mw	Mz	IV	Mw/Mn
mPEG_1_20	34,860	35,909	37,055	1.0000	1.030