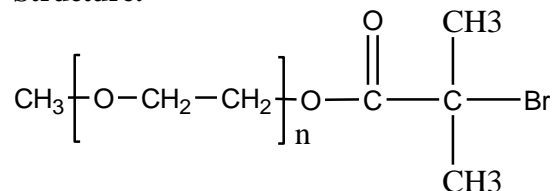


Sample Name:

**Poly(ethylene glycol) methyl ether,  $\omega$ -bromo-terminated**

Sample #: **P43982-EGOCH3Br**

**Structure:**



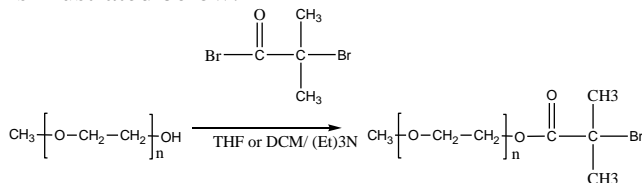
**Composition:**

$M_n \times 10^3$	PDI
5.0	1.06

Br Functionality >94%
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**Synthesis Procedure:**

Bromo terminated Poly(ethylene glycol methyl ether) was prepared by reaction of OH terminated PEG with  $\alpha$ -Bromoisobutyryl bromide in DCM or in THF in the presence of triethyl amine. The scheme of the reaction is illustrated below.



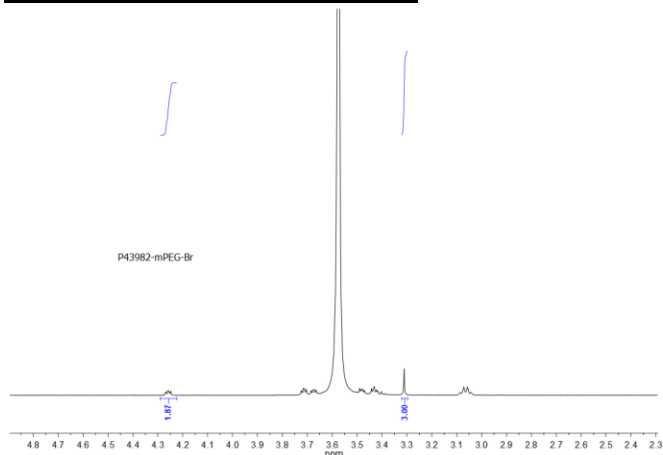
**Characterization:**

The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. Polymer functionality was verified by FTIR/H NMR depending on the molecular weights. The quantitative yield of the end functionalization was also proven in the extinction of the polymer in the ATRP process to synthesize different diblock copolymers.

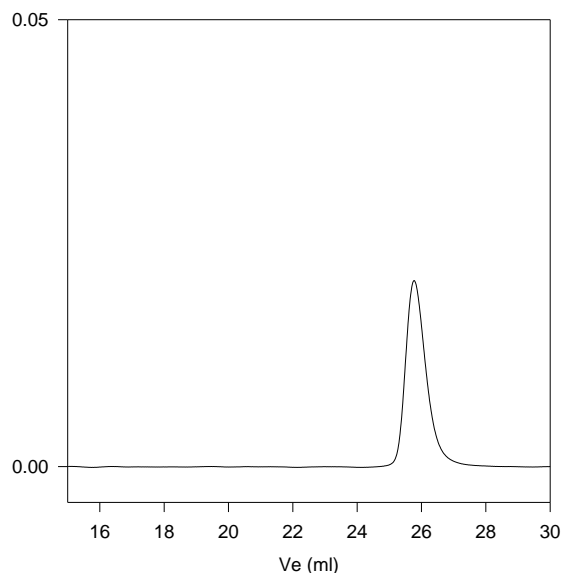
**Solubility:**

Polymer is soluble in water, methanol, ethanol, THF, and  $\text{CHCl}_3$ . It is precipitated out from cold ethanol, isopropanol, hexane, and ether.

**H NMR spectrum of the Sample:**



**SEC profile of the Sample:**



Size exclusion chromatography:

— Bromo terminated Poly(ethylene glycol methyl ether),  
 $M_n=5,000$ ,  $M_w=5,400$ ,  $PI=1.06$

**FTIR Spectrum of the Product:**

