



## Product Profile

### Identification

**Product Name:** POLY(ETHYLENE GLYCOL) DIMETHYL ETHER

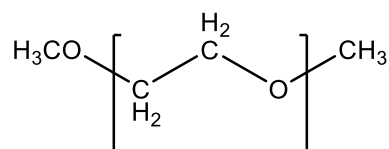
**Synonym(s):** PEO2OCH3

**Linear Formula:** CH<sub>3</sub>(OCH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub>OCH<sub>3</sub>

CAS: 24991-55-7

**Product Lot Number:** P44959-EG2OCH3

**Product Chemical Architecture:**

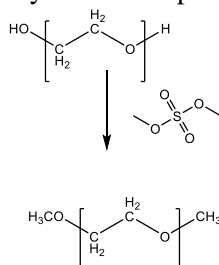


### Composition:

<b>Mn (g/mole)</b>	<b>320,000</b>
<b>MW (g/mole)</b>	<b>332,000</b>
<b>Mw/Mn</b>	<b>1.04</b>
<b>dn/dc (mL/g)</b>	<b>0.132 in water</b>

### Method of Synthesis

The polymer is prepared by living anionic polymerization process.



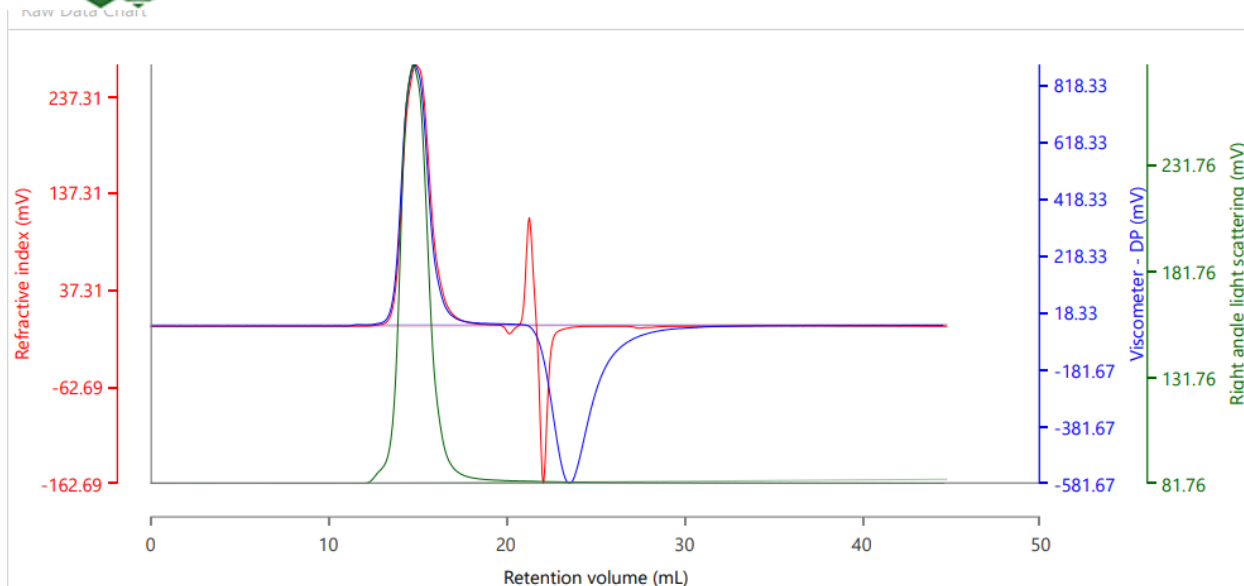
### Solubility in different solvents

THF	√	DMF	√
Methanol	√	CHCl <sub>3</sub>	√
Toluene	X	DMSO	√

### Validation of Architecture

#### A. Gel Permeation Chromatography (GPC), SEC- Profile:

Molecular weights were determined by Malvern OmniSec Reveal & Resolve GPC/SEC System equipped with Triple detector (RI, Viscometer, RALS 90° and LALS 7°) and two columns (A600M General Mixed 300×7.5 mm, Viscotek Deionized water (Filtrated on 0.22µm Nylon membrane) was the eluent. The flow rate was 1.0 ml/min.

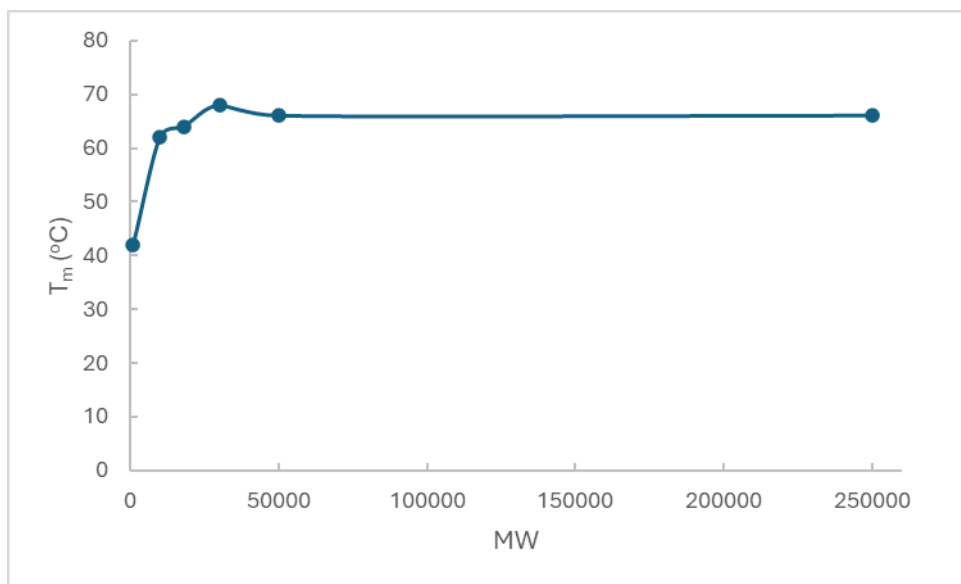


Results (Rows)

Injection Name	RV (mL)	Mn (g/mol)	Mw (g/mol)	Mp (g/mol)	Mz (g/mol)	Mw/Mn
P5617, Injection 1, Peak 1	14.9	319,786	332,387	312,521	363,285	1.039

**B. Thermal analysis results:**

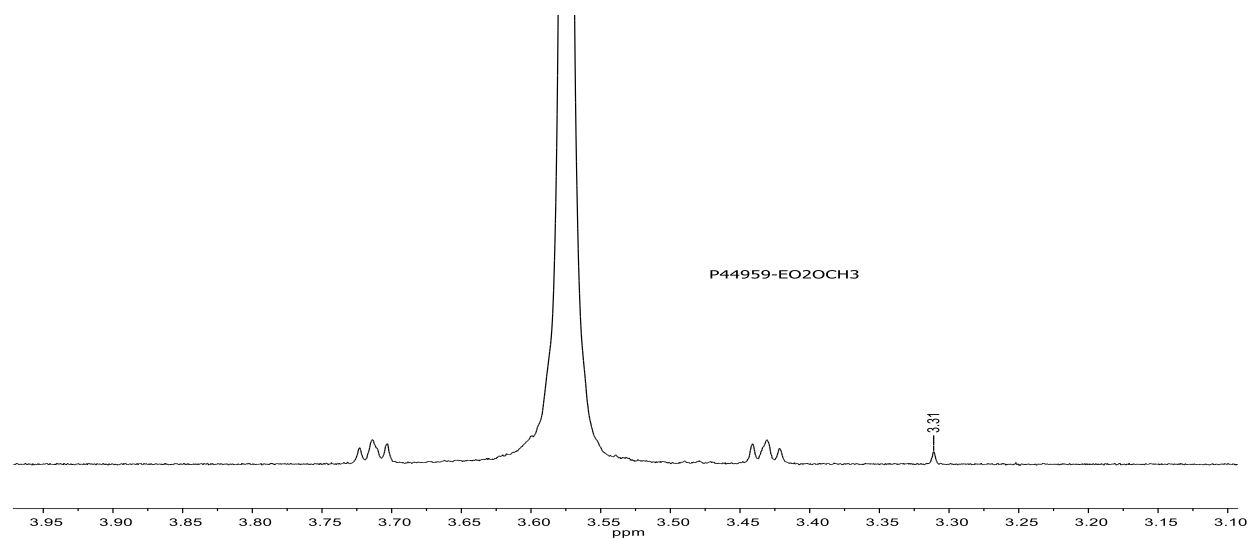
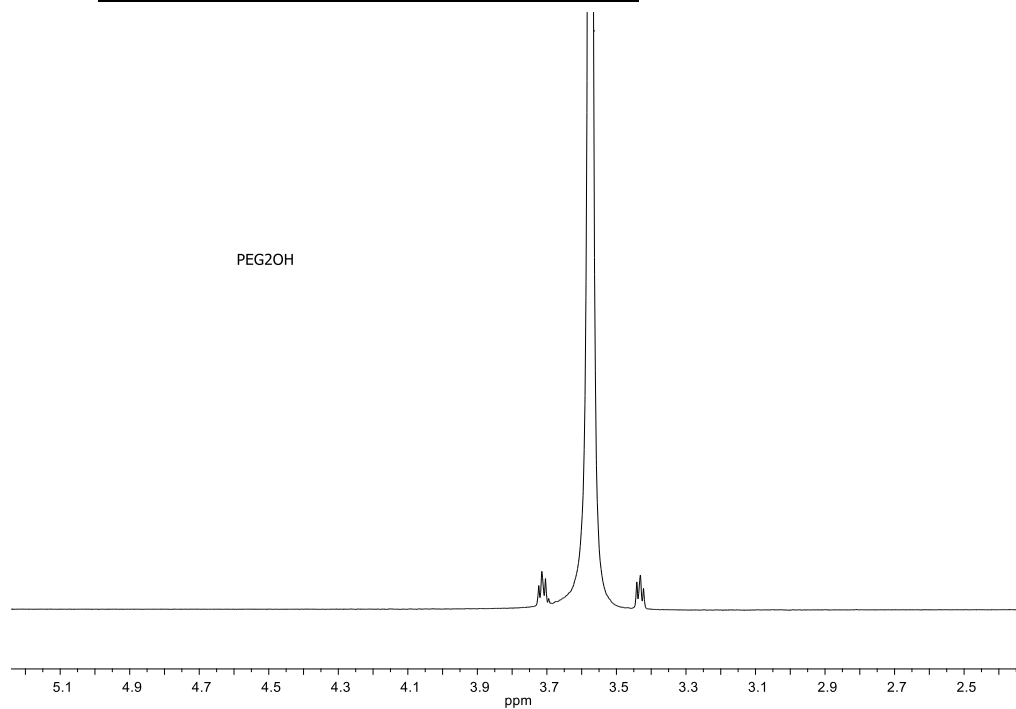
Dependence of glass transition temperature ( $T_g$ ) of PEO from its molecular weight:





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C. NMR (HNMR) OF PEO in DMSO, general



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