

# Product Profile

## Identification

**Product Name:** POLY(ETHYLENE GLYCOL) OR POLY(ETHYLENE OXIDE), A, $\Omega$ -BIS(HYDROXY)-TERMINATED

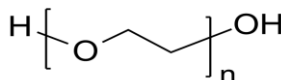
**Synonym(s):** PEO, PEG

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

CAS: 25322-68-3

**Product Lot Number:** P4221-EG2OH (PEO)

**Product Chemical Architecture:**



## Composition:

<b>Mn (g/mole)</b>	<b>242,000</b>
<b>MW (g/mole)</b>	<b>255,000</b>
<b>Mw/Mn</b>	<b>1.05</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:

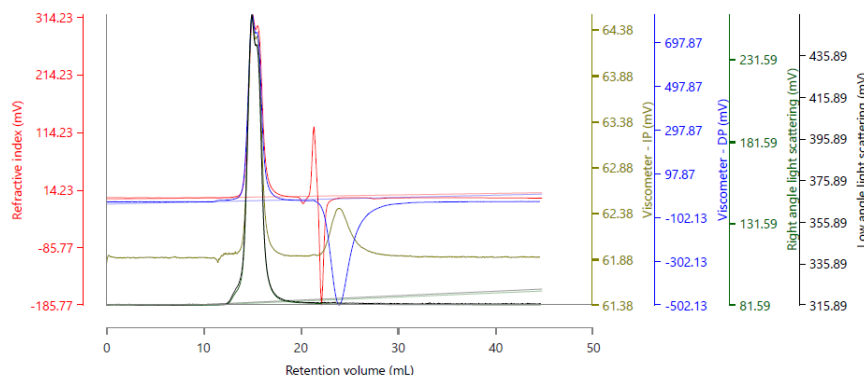
Molecular weights were determined by Malvern OmniSec Reveal & Resolve GPC/SEC System equipped with Triple detector (RI, Viscometer, RALS 90° and LALS 7°) and two columns (A600M General Mixed 300×7.5 mm, Viscotek). 0.25 M NaNO<sub>3</sub> + 0.01M NaH<sub>2</sub>PO<sub>4</sub> (PH=7) in water was the eluent. The flow rate was 1.0 ml/min.

Polymer Source

Malvern Panalytical



Raw Data Chart

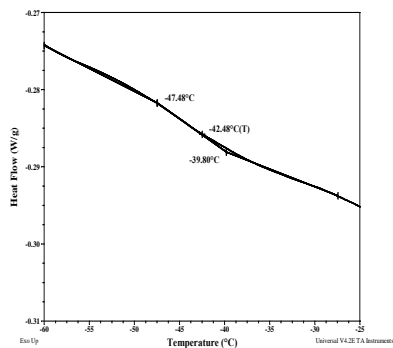
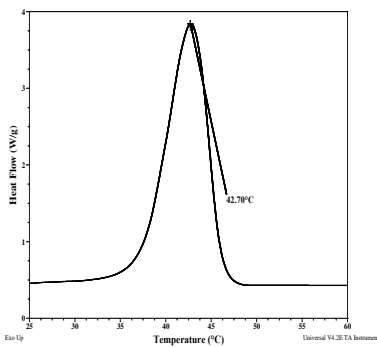
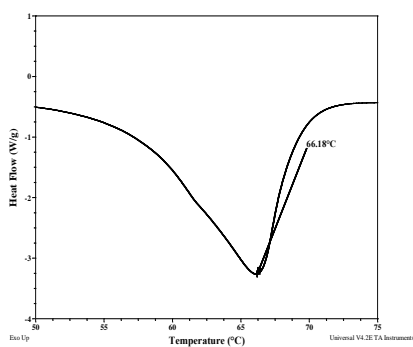


Results (Rows)

Injection Name	RV (mL)	Mn (g/mol)	Mw (g/mol)	Mp (g/mol)	Mz (g/mol)	Mw/Mn
P4221, Injection 1, Peak 1	15.04	242,090	254,862	236,286	315,667	1.053

**B. Thermal analysis results:**

Sample	T <sub>m</sub> (°C)	T <sub>c</sub> (°C)	T <sub>g</sub> (°C)
Typical PEO sample (Mn over 50k Da)	66	43	-43



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

