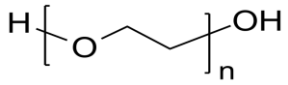
Product Profile

Identification

Product Name: POLY(ETHYLENE GLYCOL) OR POLY(ETHYLENE OXIDE), A,Ω-BIS(HYDROXY)-TERMINATED
Synonym(s): PEO, PEG
Linear Formula: $H(OCH_2CH_2)_nOH$
CAS: 25322-68-3
Product Lot Number: P44491A-EG2OH (PEO)
Product Chemical Architecture:



Composition:

Mn (g/mole)	**51,000**
MW (g/mole)	**55,000**
Mw/Mn	**1.07**
dn/dc (mL/g)	**0.132 in water**

Method of Synthesis

The polymer is prepared by anionic polymerization process using dipotassium salt of ethylene glycol.

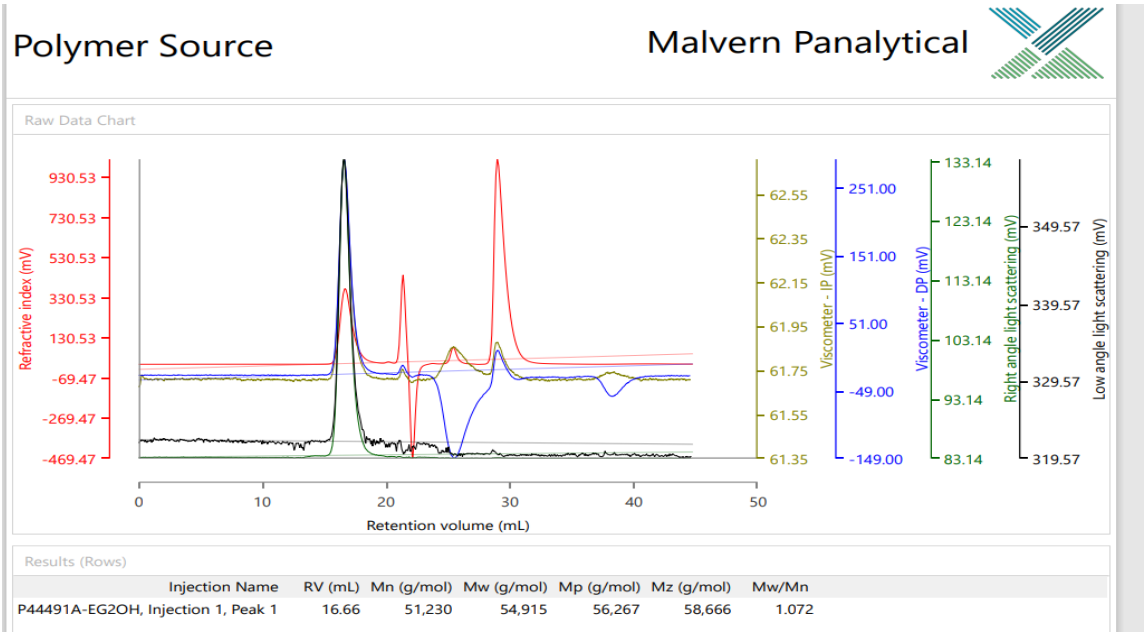
Solubility in different solvents

THF	√	DMF	√
Methanol	√	CHCl3	√
Toluene	**X**	DMSO	√

Validation of Architecture

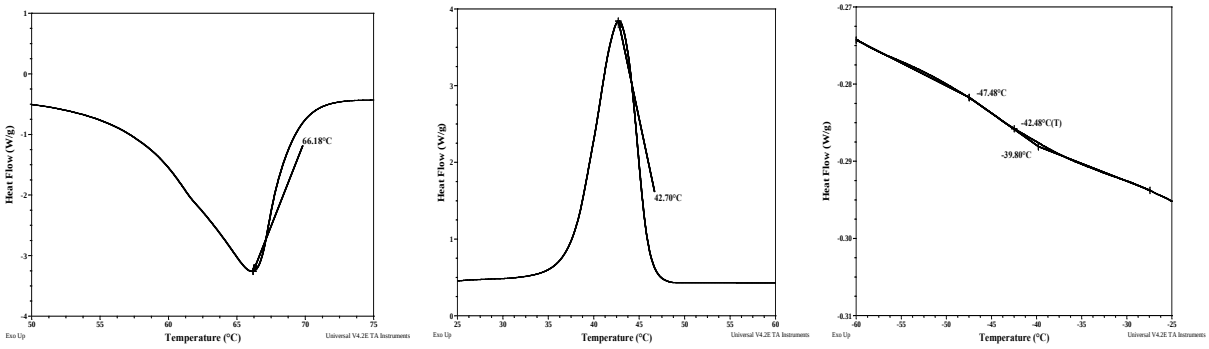
A. <u>Gel Permeation Chromatography (GPC), SEC- Profile:</u>

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 $NaNO_3$ + 0.01M NaH_2PO_4 (PH=7) in water was the eluent. The flow rate was 1.0 ml/min.



B. **Thermal analysis results:**

Sample	T_m (ºC)	T_c (ºC)	T_g (ºC)
Typical PEO sample (Mn over 50k Da)	66	43	-43



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