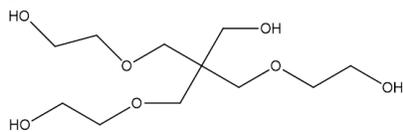


Sample Name:
Pentaerythritol ethoxylate (3/4 EO/OH)

Sample #: **P44214-4EOOH**

Structure:



Chemical Formula: C₁₁H₂₄O₇
 Molecular Weight: 268.3

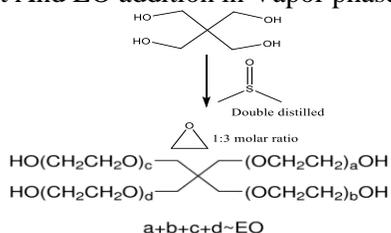
Composition:

| | |
|---------------------------------|------|
| Mn x 10 ³ (total) | PDI |
| 0.27 | 1.14 |

Synthesis Procedure:

The polymer was prepared From Pentaerythritol-DMSO

Catalyst And EO addition in Vapor phase.



Characterization:

The product was characterized by Size exclusion chromatography (SEC), in THF and Water as eluent, and HNMR in CdCl₃, Acetone, DMSO data analysis.

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: Passed through Al₂O₃ dried.

Solubility:

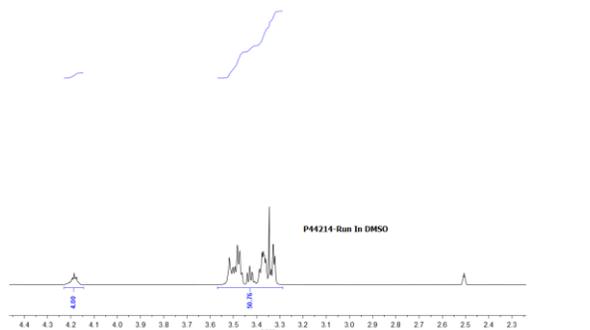
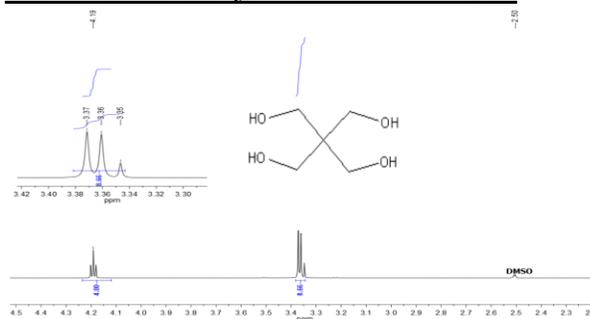
The product is soluble in toluene (Hot) THF, water and CHCl₃.

OH, determination by Titration in dried THF.

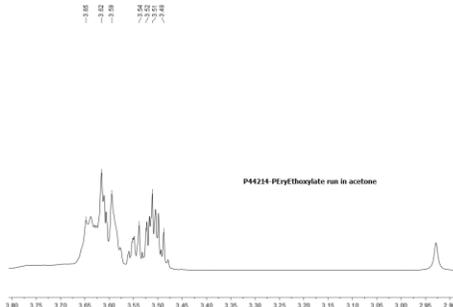
1g of the oligomer dissolved in THF dried (Na benzeophenone-Naphthalene) and titrate solution at room temperature with 0.2M solution Na-Naphthalene till persistent green color.

Volume of Naphthalene used 0.2M 79ml. OH% 15.8 mmole/g.

HNMR of Pentaerythritol run in DMSO:

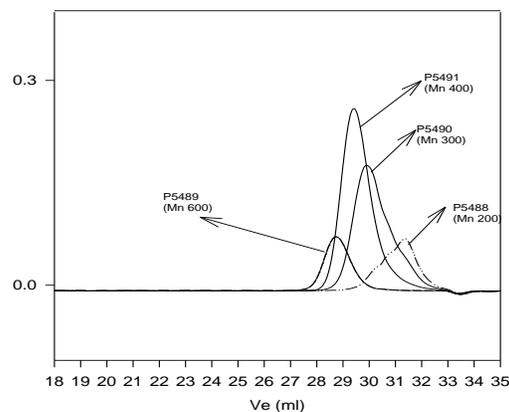


HNMR of Pentaerythritol run in Acetone:



SEC profile of the product:

SEC Profile for PEG Oligomers



Size exclusion chromatography of poly(ethylene glycol):
 Lot# P 5488-EG2OH Mn=200, Mw=240, Mw/Mn = 1.20
 Lot# P 5490-EG2OH Mn 300 Mw: 360 Mw/Mn = 1.20
 Lot# P 5491-EG2OH Mn 400 Mw: 480 Mw/Mn = 1.2
 Lot# P 5489-EG2OH Mn 600 Mw: 690 Mw/Mn 1.15