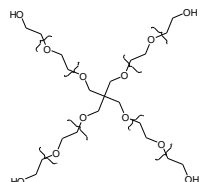


Sample Name:
Four arm Poly ethylene oxide
Hydroxy terminated

Sample #: **P18668-4EOOH**

Structure:



Composition:

Mn x 10 ³ (total)	PDI
36.0	1.20

Synthesis Procedure:

The polymer was prepared by anionic living polymerization of ethylene oxide using pentaerythritol potassium salt as the initiator.

Characterization.

By Size exclusion chromatography (SEC): The molecular weights were determined using VISCOTEK –TDA 305 triple detectors.

Purification of the obtained polymer:

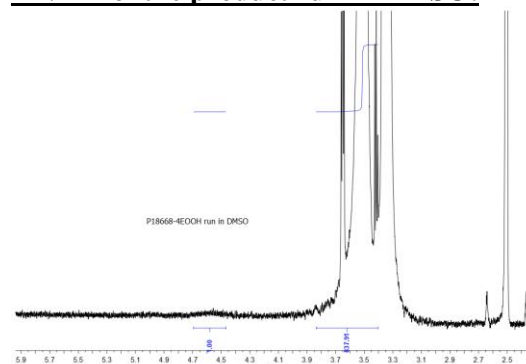
Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Dissolved the polymer in de-ionized distilled water to remove the any insoluble organic catalyst side product.
2. Polymer extracted from water with dichloromethane.
3. Polymer solution in dichloromethane was dried over anhydrous sodium sulfate.
4. Solution filtered and then passed through a column packed with basic Al₂O₃.
5. Solution concentrated on rota-evaporator
6. Solution precipitated in cold diethyl ether.
7. Dried under vacuum for 48h at 38 °C.

Solubility:

Polymer is soluble in toluene, THF, water and CHCl₃. The polymer is insoluble in hexane, ether, cold isopropanol and ethanol.

HNMR of the product run in DMSO:

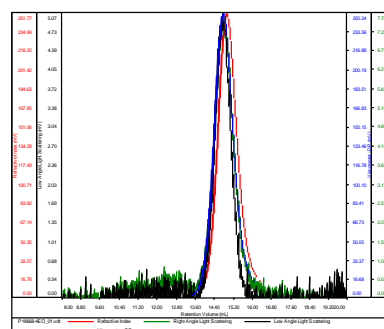


SEC profile of the product:

dn/dc values taken from literature 0.044ml/g

SAMPLE ID: P18668-4EO

Conc (mg/mL)	8.6273
dn/dc (mL/g)	0.0440
Method	ps804042014-0000.vcm
Solvent	DMF w 0.03M LiBr
Column	PSS

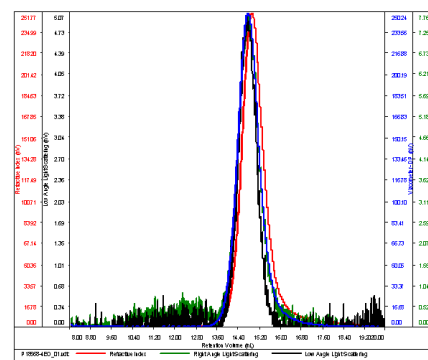


Sample	Mn	Mw	Mp	Mw/Mn	IV
P18668-4EO_01.vdt	32,127	38,546	37,953	1.200	0.3281

dn/dc values calculated 0.035ml/g

SAMPLE ID: P18668-4EO

Conc (mg/mL)	10.8458
dn/dc (mL/g)	0.0350
Method	ps804042014-0000.vcm
Solvent	DMF w 0.03M LiBr
Column	PSS



Sample	Mn	Mw	Mp	Mw/Mn	IV
P18668-4EO_01.vdt	40,388	48,458	47,712	1.200	0.2610

We have taken the average values of Mn 36,000