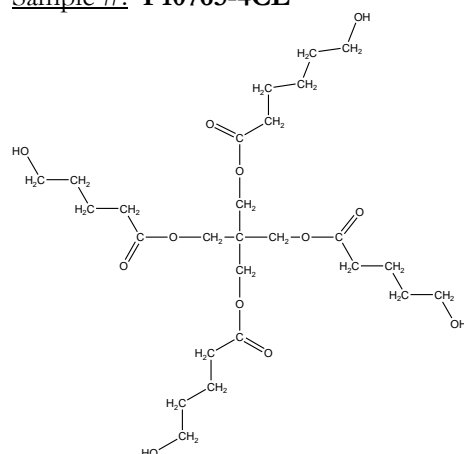


Sample Name:

Four arm Poly(ϵ -caprolactone) bearing core of pentaerythritol

Sample #: P10765-4CL



Mn x 10 ³ branch	PDI
0.201 (Mn total 0.806)	1.3
Solubility in DMF, DMSO and in Acetone, CHCl ₃	

Core: 136

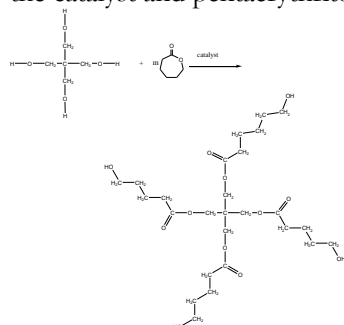
4CL: 670

Total with Core: 806

Mn of Branch: 201

Synthesis Procedure:

The polymer was prepared by ring opening polymerization of caprolactone using Tin octoate as the catalyst and pentaerythritol Mn of 136.



Characterization:

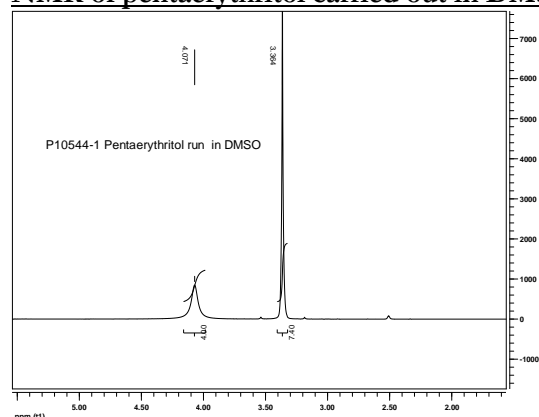
The Mn of the polymer is calculated from ¹H-NMR spectroscopy by comparing the peak area of the core protons at about 3.6 ppm with the ϵ -caprolactone protons at about 4.1 ppm. Polydispersity is determined by size exclusion chromatography (SEC): Varian liquid chromatograph equipped with UV and refractive detector. SEC columns from Supelco were used with THF containing 2 vol% (Et)₃N as the eluent.

Purification of the obtained polymer:

Purification of the obtained polymer was carried out rigorously as discussed below to ensure the removal of the catalyst and traces amount of unreacted 4-hydroxy core based on pentaerythritol.

1. Dissolve the polymer dichloromethane, solution was filtered and then passed through a column packed with basic Al₂O₃.
2. Solution was concentrated on rota-evaporator
3. Solution was precipitated in cold diethyl ether.
4. Dried under vacuum for 48h at 60 °C to remove any low molecular weights oligomeric species.

NMR of pentaerythritol carried out in DMSO:



¹H NMR of the Product:

