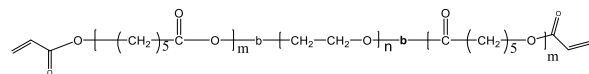


Sample Name: Poly(ϵ -caprolactone)-b-poly(ethylene oxide)-b-poly(ϵ -caprolactone), α,ω -bis(acrylate)-terminated

Sample #: P44458B-Acry-CLEOCL-Acry

Structure:

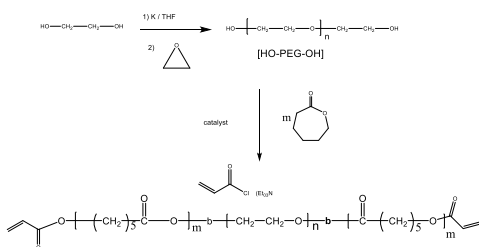


Composition:

Mn x 10 ³ Acry-PCL-b-PEO-b- PCL-Acry	PDI
2-b-20-b-2	1.12
End Group Functionality < 88%	

Synthesis Procedure:

The polymer is prepared by living anionic polymerization of ethylene oxide and coordination polymerization of ϵ -caprolactone. The scheme of the reaction is illustrated below:



Characterization:

The product was characterized by size exclusion chromatography (SEC) and ¹H NMR data analysis.

Solubility:

Poly(ϵ -caprolactone - ethylene oxide -b- ϵ -caprolactone) is soluble in CHCl₃, THF, and toluene. It precipitated out from cold ethanol and diethyl ether.

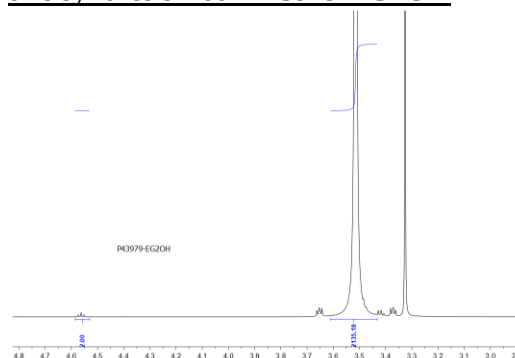
Purification of the obtained polymer:

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

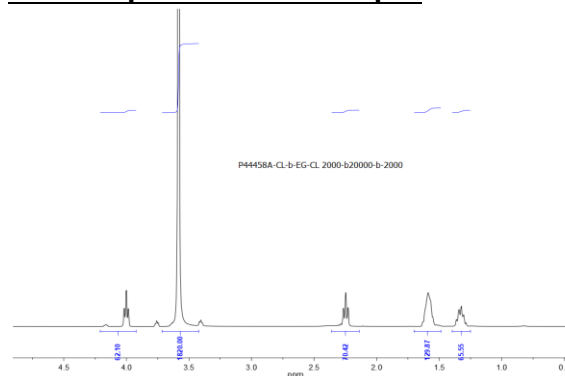
1. Dissolved the polymer in dried acetone and filter using Whatman Filter # 4.

2. The polymer solution dried on a small amount of Na₂SO₄, and the solution passed through a column packed with dried Al₂O₃.
3. Polymer solution pass through a Whatman filter paper and added slowly to diethyl ether.
4. Solution stirrer for 1h at room temperature.
5. Solution filter and dried under vacuum for over night at 40 °C.
6. It was packed under the hood and sealed under vacuum.

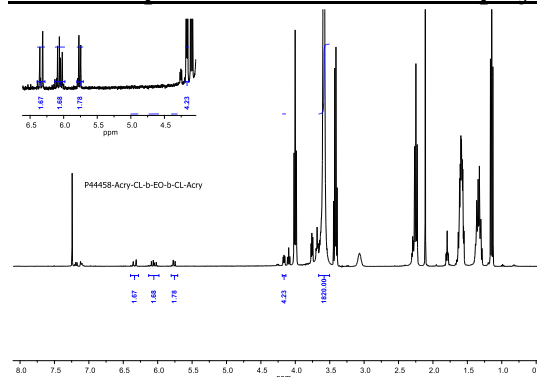
¹H-NMR Spectrum of the PEO-2OH Used in this synthesis Lot# P43979-EG2OH



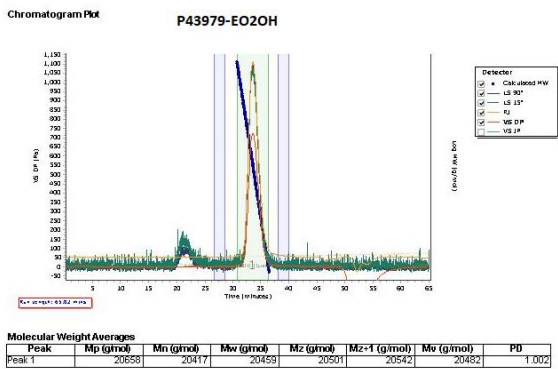
H NMR spectrum of the Sample:



¹H-NMR Spectrum of the Triblock copolymer



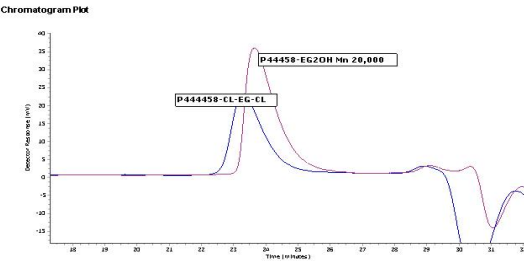
SEC elugram of the Sample:



Agilent GPC/SEC Software
Reviewer Report



Workspace Details
Workspace name: Calibration 2021-10-27
Location: D:\GPC\Workspaces\Calibration 2021-10-27\
Created by: agilent2 at 4:40:59 PM on October 27, 2021



Summary Details

Sample Name	Sample Filename	Analysis Comments	Bulk MW	Mp	Mn	Mw	Mv	Mz	Mz + 1	PD	Bulk IV
IVn	IVw										