

Product Profile

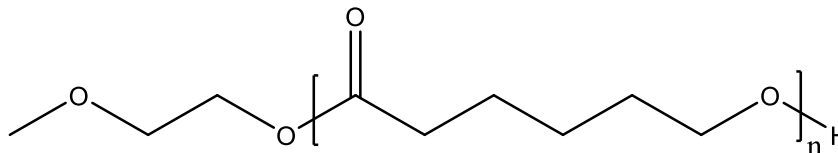
Identification

Product Name: Poly(ε-Caprolactone)

Product Lot Number: P18176C1-CL

CAS #: 24980-41-4

Chemical Architecture:



Composition:

Mn (g/mole)	18,500
Mw (g/mole)	27,500
Mw/Mn	1.50
dn/dc (mL/g) in THF at 30 °C	0.030

Method of Synthesis

The polymer is synthesized by ring opening polymerization process.

Solubility in different solvents:

THF	√	DMF	√
Alcohol	X	CHCl ₃	√
Toluene	√	Water	X

Validation of Architecture

A. Gel Permeation Chromatography (GPC), SEC Profile:

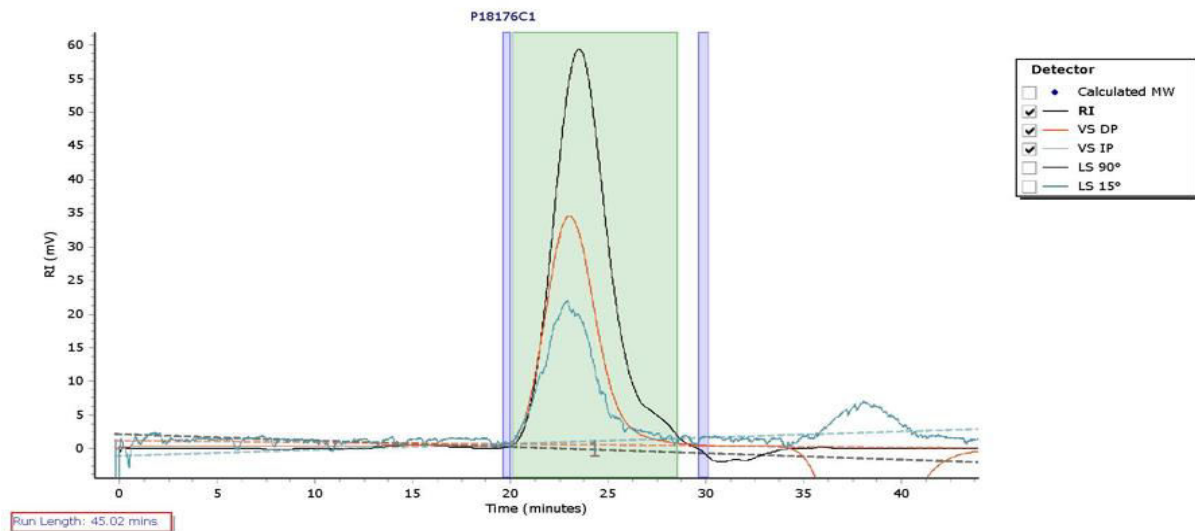
Molecular weights were determined by Agilent Technologie 1260 Infinity II GPC/SEC System equipped with Triple detector (RI, Viscometer, RALS 90° and LS 15°) and three columns (PLgel, 7.5x300 mm, 5μm-10μm, 10⁵-10⁶Å).

THF (stabilized BHT) with 1%(v/v%) TEA was the eluent. The flow rate was 1.0 ml/min.



P18176C1

Chromatogram Plot

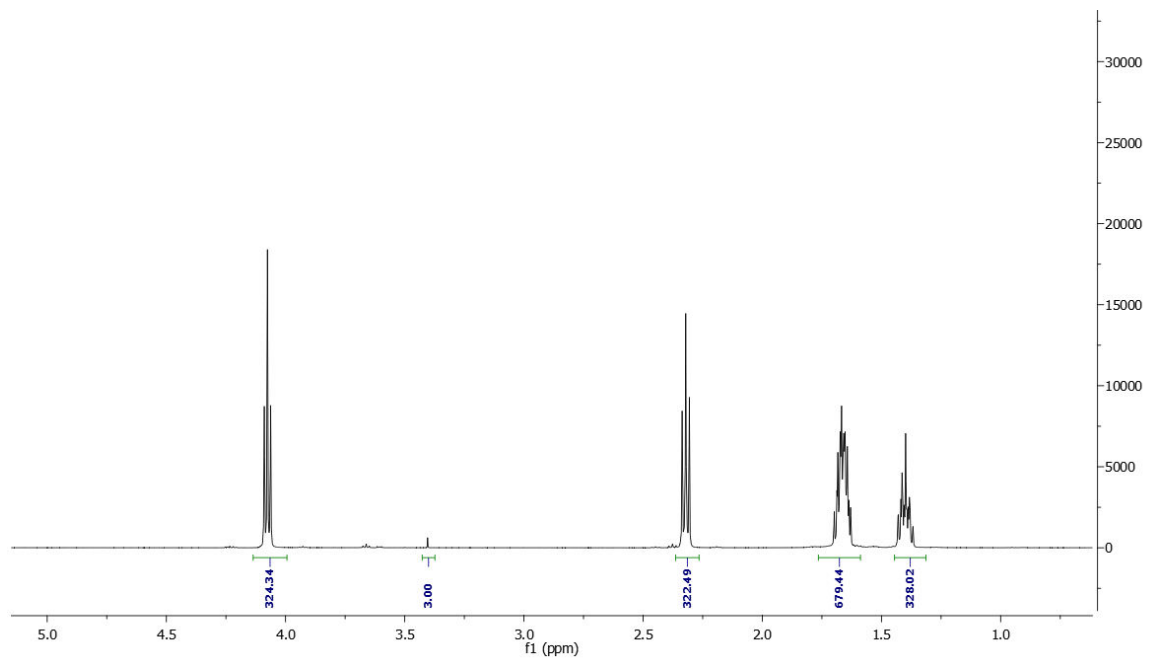


Molecular Weight Averages

Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	34316	23561	36054	48658	61220	46860	1.53

B. NMR (¹H NMR) of CL

CL sample was dissolved in CDCl₃. ¹H NMR spectra was determined using a 500 MHz. Bruker Avance III spectrometer.



Thermal analysis of the sample

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

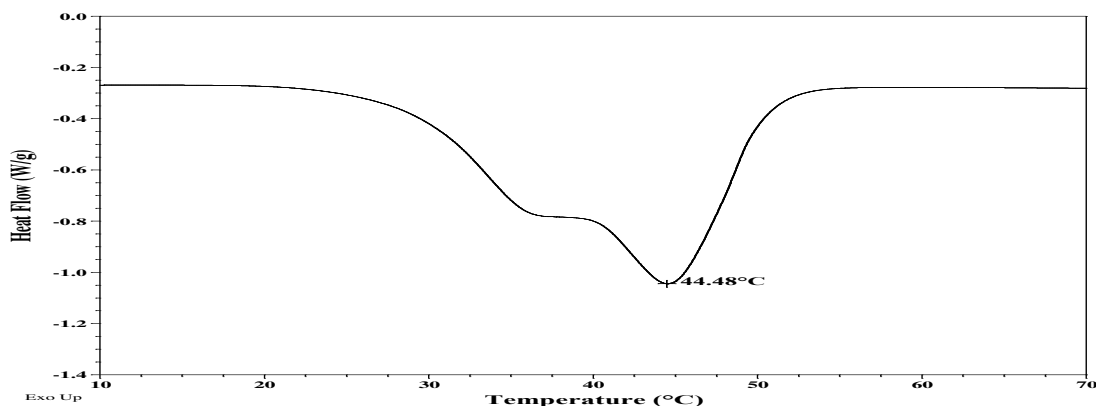
Melting and crystallization curve for the sample

The melting temperature (T_m) was taken as the maximum of the endothermic peak where as the crystallization temperature (T_c) was considered as the minimum of the exothermic peak.

Thermal analysis results at a glance

T_m (°C)	T_c (°C)	T_g (°C)
44	17	Not distinct

Melting curve for the CL sample:



Crystallization curve for the CL sample:

