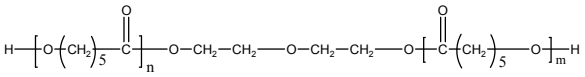
Sample Name: Dihydorxyl ended Poly(ε-caprolactone)

Sample #: P7121-CL2OH

Structure:

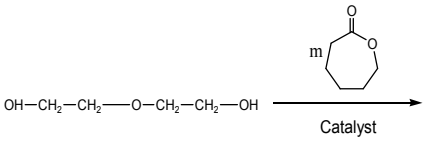


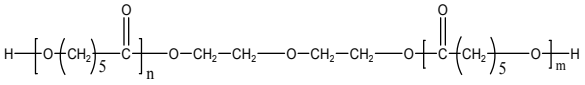
Composition:

Mn x 10^3	PDI
7.0	1.11

Synthesis Procedure:

The poly(ε-caprolactone) is prepared by ring opening polymerization with the Tin catalyst. The reaction scheme is shown below:





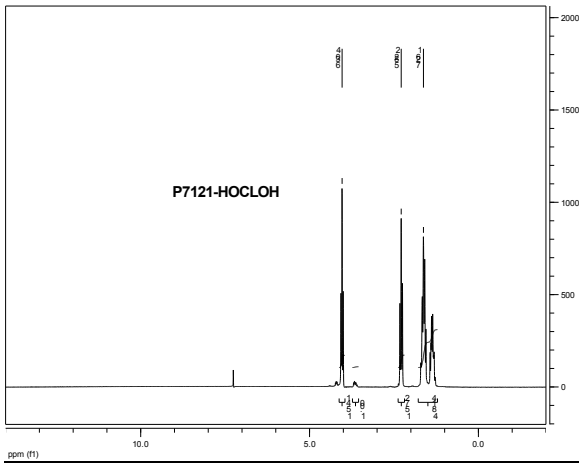
Characterization:

The molecular weight is calculated from NMR of poly(ε -caprolactone) by comparing by comparing the peak area of the ethylene oxide protons at about about 3.6 ppm with the ε-caprolactone protons at about 4.1 ppm. The polydispersity index (PDI) is obtained by size exclusion chromatography.

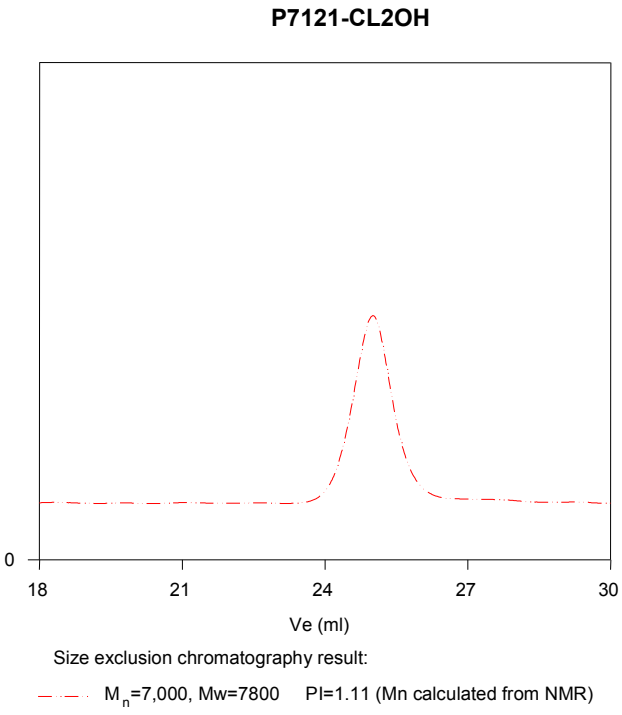
Solubility:

Poly(ε-caprolactone) is soluble in toluene, THF, $CHCl_3$ and CH_2Cl_2. The polymer is insoluble in methanol, hexane and ether.

NMR of sample:



SEC of Sample:



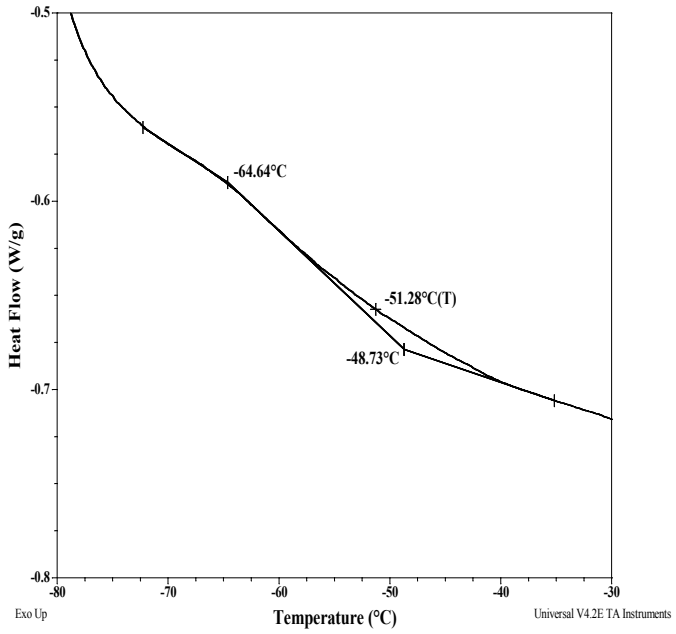
Thermal analysis of the sample P7121-CL2OH

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).

Thermal analysis results at a glance

T_m (°C)	T_c (°C)	T_g (°C)
63	31	-51

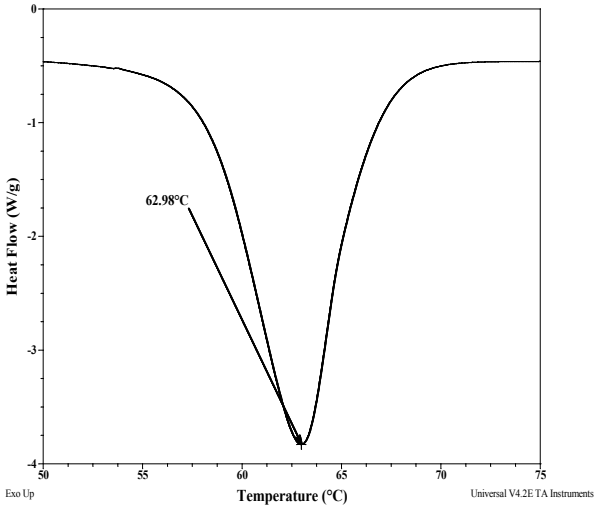
Thermogram for the sample:



Melting and crystallization curves 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.

Melting curve for the CL sample:



Crystallization curve for the CL sample: