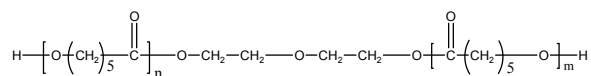


Sample Name: Dihydroxyl ended Poly(ϵ -caprolactone)

Sample #: P7119-CL2OH

Structure:

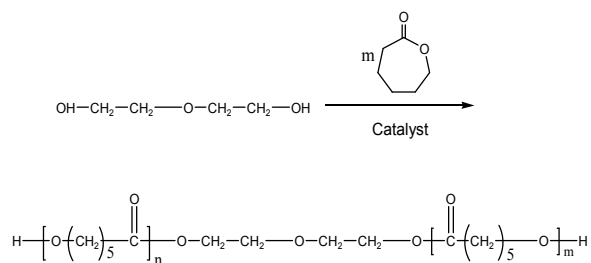


Composition:

| | |
|-------------------|-----|
| $M_n \times 10^3$ | PDI |
| 0.9 | 1.2 |

Synthesis Procedure:

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



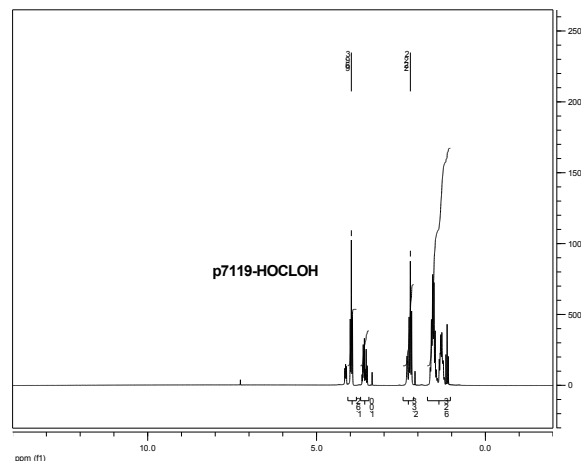
Characterization:

The molecular weight is calculated from NMR of poly(ϵ -caprolactone) by comparing the peak area of the ethylene oxide protons at 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:

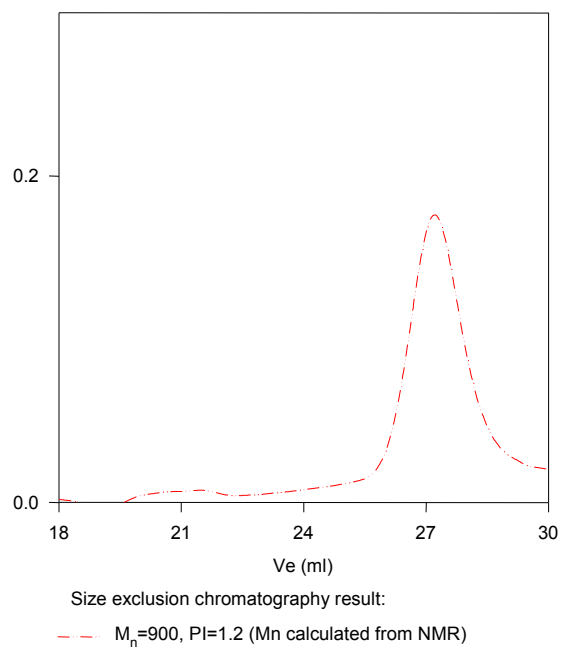
Poly(ϵ -caprolactone) is soluble in toluene, THF, CHCl_3 and CH_2Cl_2 . The polymer is insoluble in methanol, hexane and ether.

NMR of sample:



SEC of Sample:

P7119-CL2OH



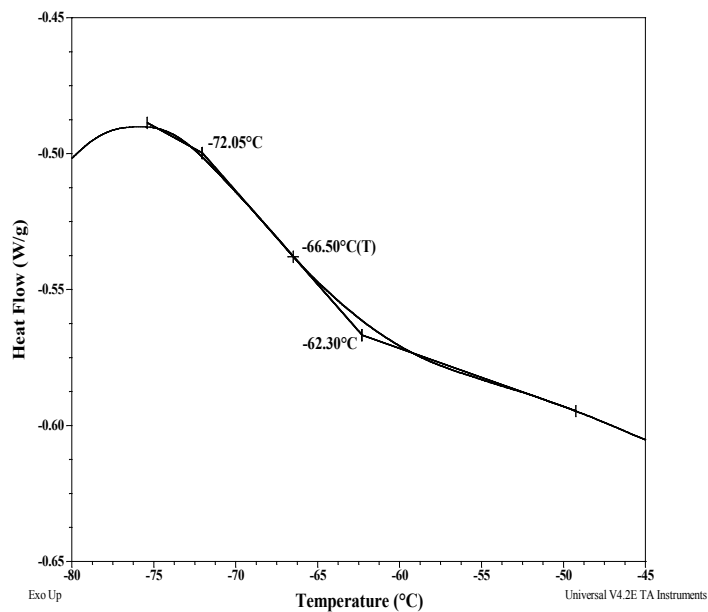
Thermal analysis of the sample P7119-CL2OH

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) |
|------------|------------|------------|
| 30 & 42 | 13 | -67 |

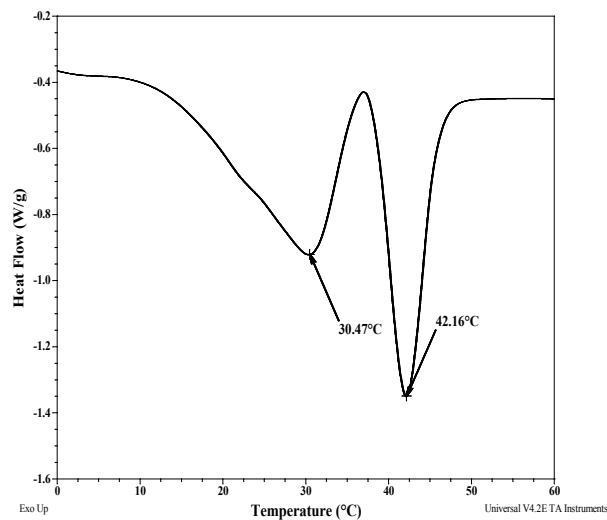
Thermogram for the sample



Melting and crystallization curves

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:

