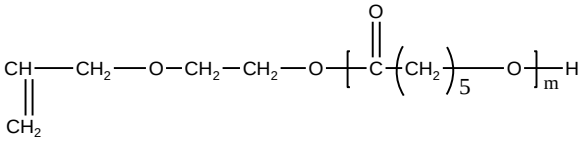
Sample Name: Allyloxyethanol ended Poly(ε-caprolactone)

Sample #: P7145-CLAlly

Structure:

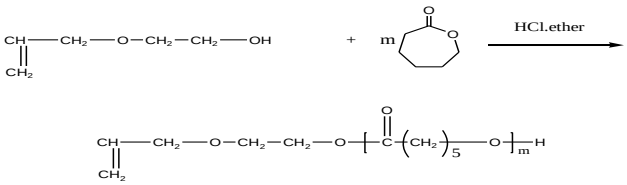


Composition:

$M_n \times 10^3$		PDI
10.2		1.3
T_g= 28°C	T_m= 55°C	T_c= 33°C

Synthesis Procedure:

Allyloxyl ethanol ended poly(ε-caprolactone) is prepared by cationic polymerization of ε-caprolactone in the presence of allyloxyl ethanol and HCl. The scheme of the reaction is illustrated below:



Characterization:

The molecular weight is calculated from NMR of poly(ε -caprolactone) by comparing by comparing the peak area of the allyloxy at about 5-6 ppm with the ε-caprolactone protons at about 4.1 ppm. The polydispersity index (PDI) is obtained by size exclusion chromatography.

Thermal analysis:

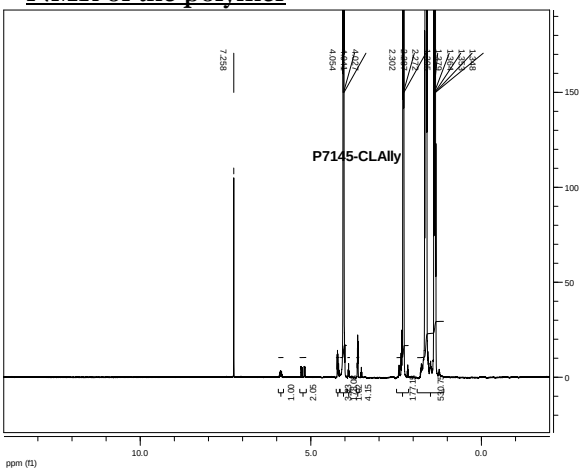
Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min.The inflection glass transition temperature (T_g) has been considered.

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.

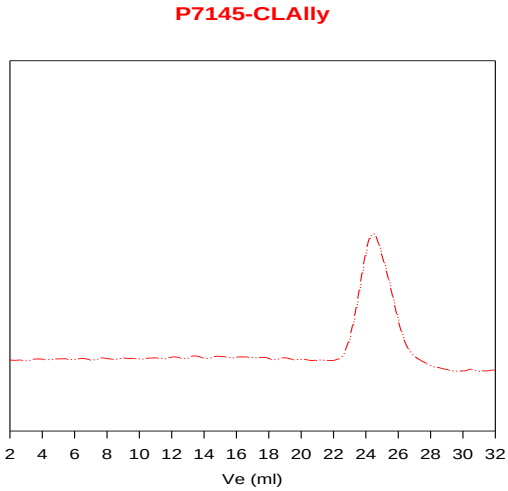
Solubility:

The polymer is soluble in toluene, THF, $CHCl_3$ and CH_2Cl_2. The polymer is insoluble in methanol, hexane and ether.

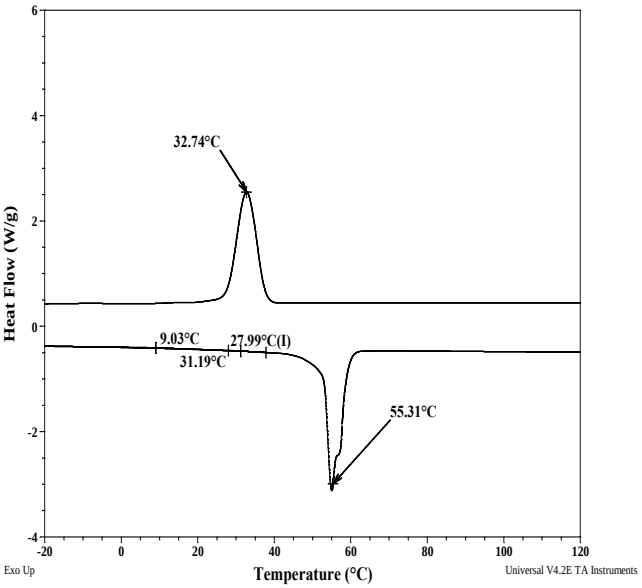
NMR of the polymer



SEC of Sample:



Size exclusion chromatography of the polymer:

M_n=10200, M_w=13200, PI=1.3

DSC thermogram for the sample: