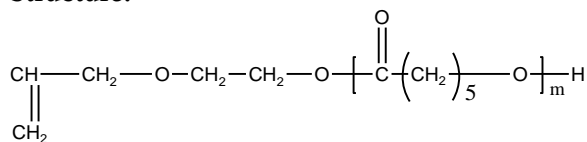


**Sample Name: Allyloxyethoxy terminated Poly( $\epsilon$ -caprolactone)**

**Sample #:** P6485-CLAllyl

**Structure:**

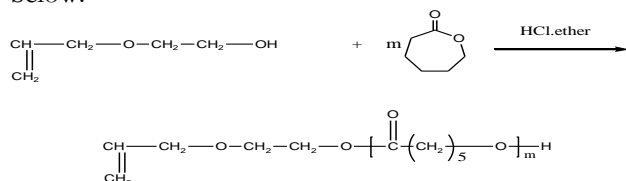


**Composition:**

$M_n \times 10^3$	PDI	
5.0	1.15	
$T_g = 16^\circ\text{C}$	$T_m = 54^\circ\text{C}$	$T_c = 30^\circ\text{C}$

**Synthesis Procedure:**

Allyloxy ethanol ended poly( $\epsilon$ -caprolactone) is prepared by cationic polymerization of  $\epsilon$ -caprolactone in the presence of allyloxy ethanol and HCl. The scheme of the reaction is illustrated below:



**Characterization:**

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

**Thermal analysis:**

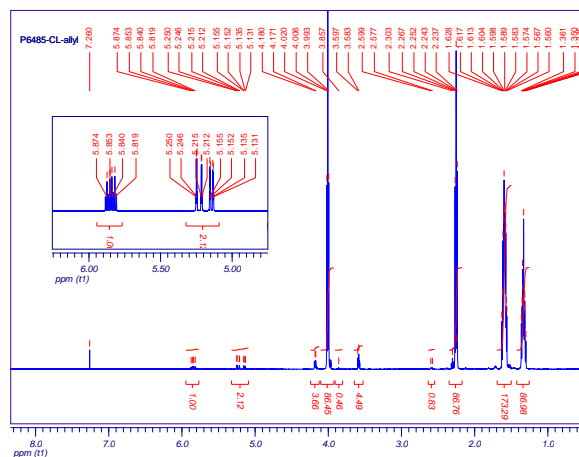
Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of  $10^\circ\text{C}/\text{min}$ . The inflection glass transition temperature ( $T_g$ ) has been considered.

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.

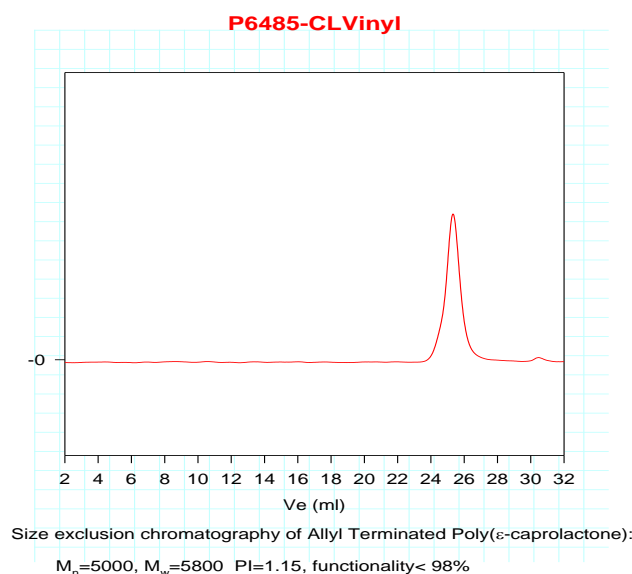
**Solubility:**

The polymer is soluble in toluene, THF,  $\text{CHCl}_3$  and  $\text{CH}_2\text{Cl}_2$ . The polymer is insoluble in methanol, hexane and ether.

**NMR of the polymer**



**SEC of Sample:**



**DSC thermogram for the sample:**

