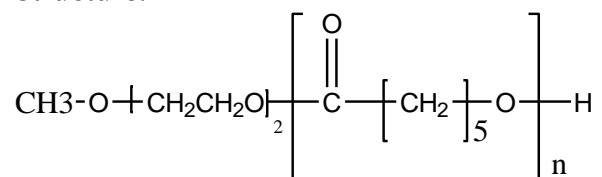


**Sample Name:** Poly( $\epsilon$ -caprolactone)

**Sample #:** P7432-CL

**Structure:**

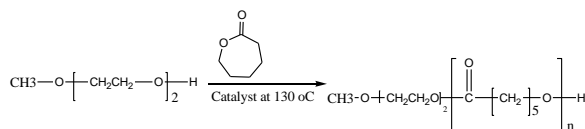


**Composition:**

$M_n \times 10^3$	PDI
1.90	1.30

**Synthesis Procedure:**

The polymerization of  $\epsilon$ -caprolactone can be initiated by Diethylene glycol methyl ether as initiator and Tin (II) 2-ethylhexanoate as catalyst. The reaction scheme is shown below:



**Purification:**

Polymer precipitated in ether/hexane mixture at cold temperature.

**Characterization:**

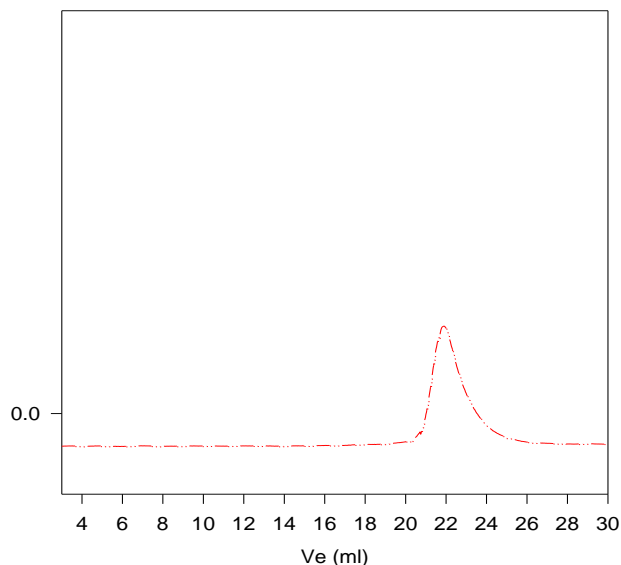
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography by  $^1\text{H}$ NMR.

**Solubility:**

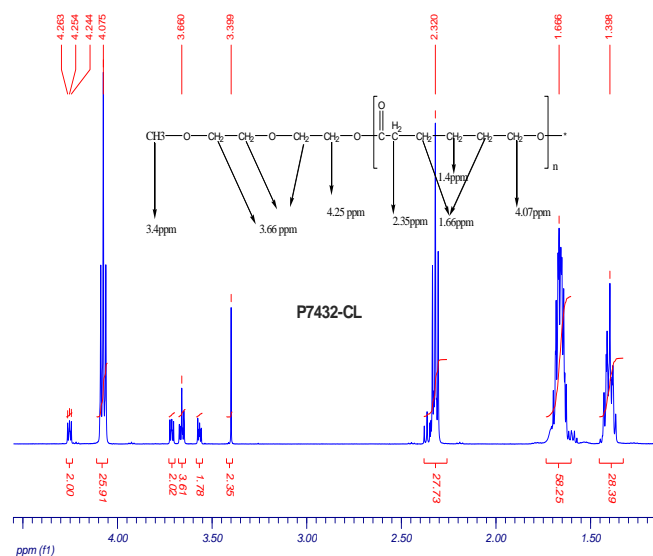
Poly( $\epsilon$ -caprolactone) is soluble in toluene, THF,  $\text{CHCl}_3$  and  $\text{CH}_2\text{Cl}_2$ . The polymer is insoluble in methanol, hexane and ether.

**SEC of Sample:**

**P7432-CL**



**$^1\text{H}$ NMR of the sample:**



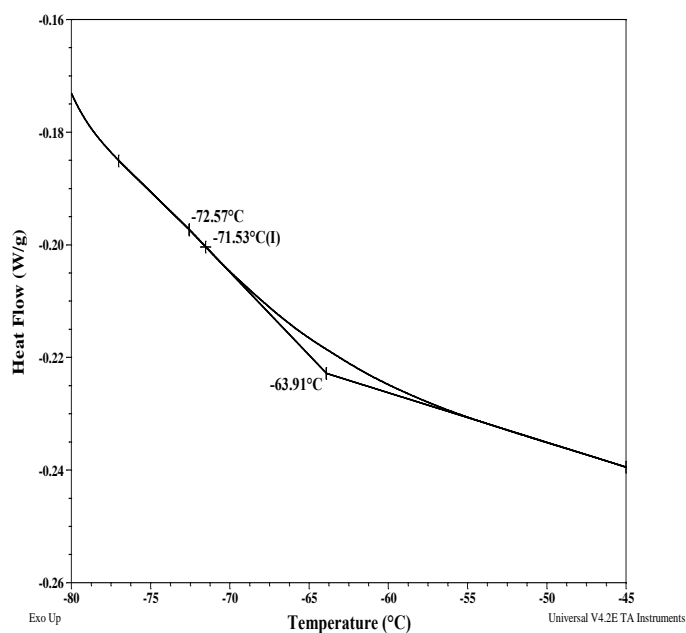
## Thermal analysis of the sample P7432-CL

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)
57	30	-72

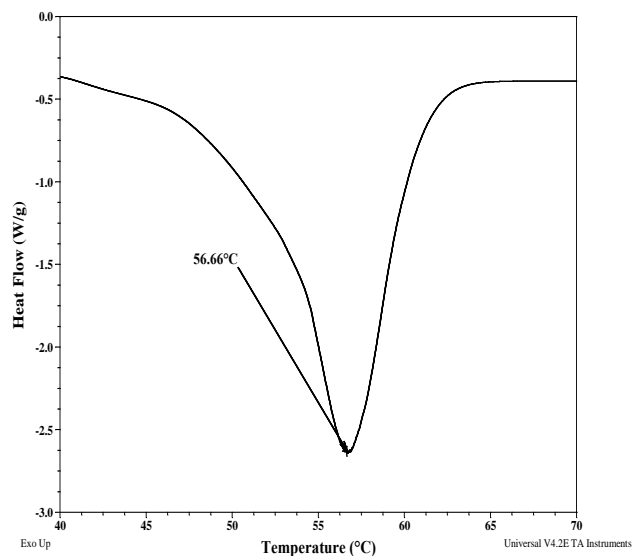
### Thermogram for the sample



## 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.

### Melting curve for the CL sample:



### Crystallization curve for the CL sample:

