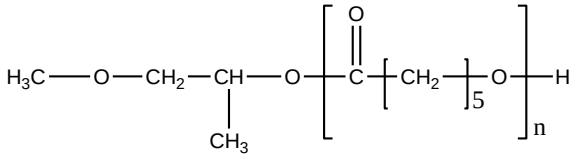
Sample Name: **Poly (ε- caprolactone)**

Sample #: **P3821-CL**

Structure:

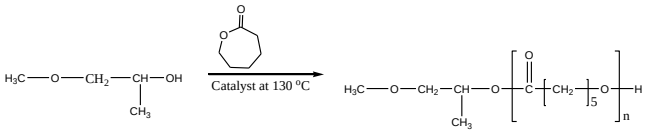


Composition:

Mn x 10^3	PDI
11.0	1.18

Synthesis Procedure:

The polymerization of ε-caprolactone can be initiated with a variety of catalysts based on aluminum, tin, barium or HCl. The reaction scheme is shown below:



Purification:

When metal catalysts are employed, the residues are removed by repeated extraction with an aqueous EDTA solution (0.1 mol L^{-1}) followed by washing with water up to neutral pH. The non-polar solvent (usually toluene) is removed under reduced pressure and the polymer is precipitated in a large excess of hexane. The polymer is then freeze-dried after dissolution in benzene.

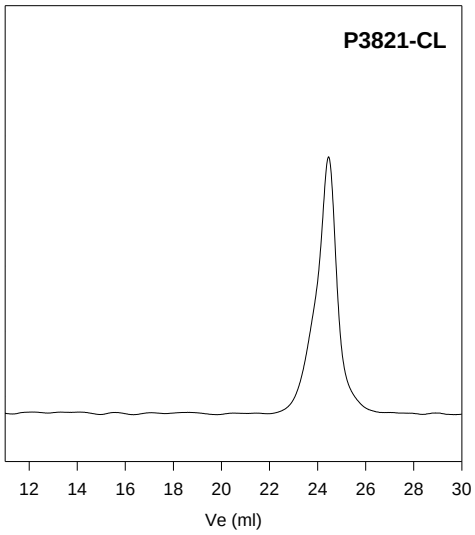
Characterization:

The molecular weight and polydispersity index (PDI) are 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.

SEC of Sample # P3821-CL:



Size exclusion chromatograph of polyε–caprolactone:

M_n=11000, M_w=13000, PI=1.18