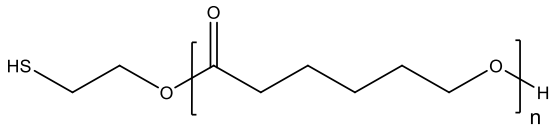
Sample Name: **Poly(ε-caprolactone), (α-thiol, ω-hydroxy)-terminated**

Sample #: **P44073I-CLOHSH**

Structure:

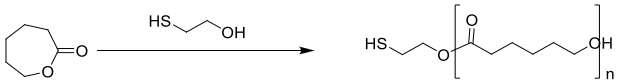


Composition:

$M_n \times 10^3$ HS–PCL	PDI
2.1	1.2
SH functionality ≥ 45%	
Contains DTT as stabilizer	

Synthetic Procedure:

HS–PCL is prepared by ring–opening polymerization of ε–caprolactone using mercaptoethanol as an initiator. The scheme of the reaction is illustrated below:



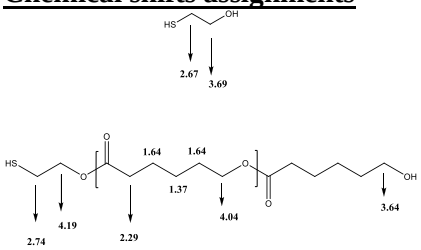
Solubility:

Poly(ε–caprolactone) is soluble in $CHCl_3$, Acetone, THF, insoluble in methanol, ethanol. Precipitated from Acetone or $CHCl_3$ into hexane/EtOH or ether/EtOH.

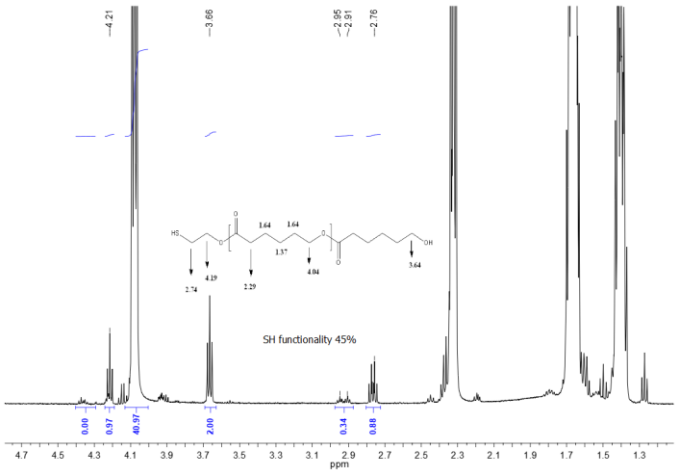
Characterization:

PCL bearing free thiol end was analyzed by size exclusion chromatography (SEC) to obtain the polydispersity index (PDI). M_n was estimated by NMR. Percentage of thiol functionality was determined from the integrals ratio of the peaks at 3.64 and 2.74 ppm.

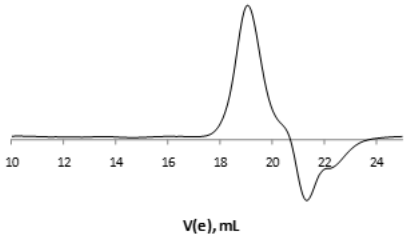
Chemical shifts assignments



^{1}H–NMR spectrum PCL with free Thiol End group:



SEC profile of the polymer:



N.B.: Certain broadening of the elugram might be due to the strong interaction of SH–group with the column packing material