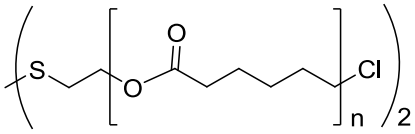
Sample Name: α,ω–Chloro terminated Poly(ε–caprolactone), bearing dithiodiethanol core

Sample #: P20015C_CL2Cldisulf

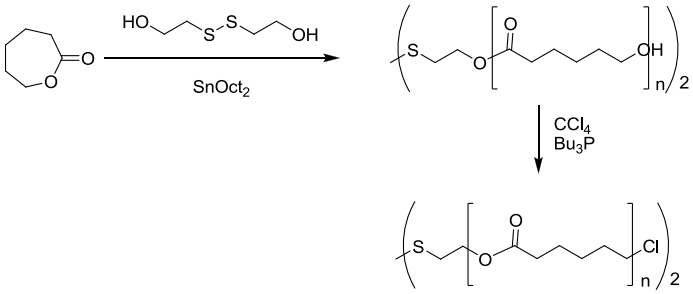
Structure:



Composition:

$M_n \times 10^3$ Cl–PCL–SS–PCL–Cl	PDI
4.0 (NMR), 3.2 (SEC)	1.3
SS functionality ≥85% Cl functionality 100%	

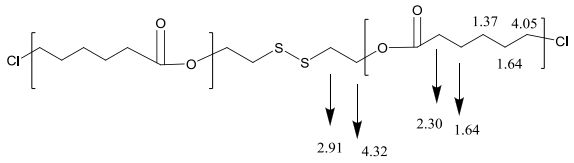
Synthetic Procedure: $(\text{-S–PCL–Cl})_2$ is prepared by ring–opening polymerization of ε–caprolactone using disulfide–based initiator followed by the terminal group modification. The scheme of the reaction is illustrated below:



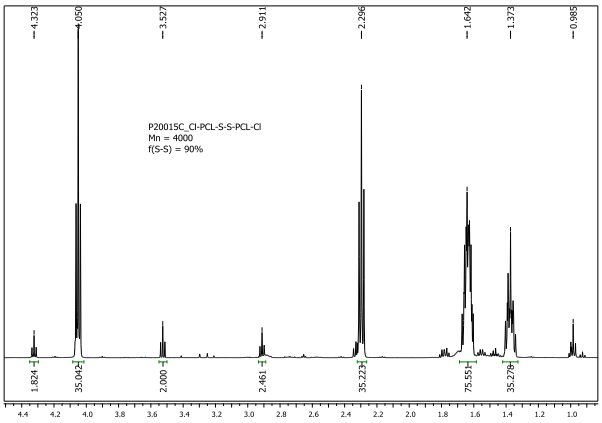
Characterization: PCL bearing the disulfide linkage was analyzed by size exclusion chromatography (SEC) to obtain polydispersity (PDI). M_n was estimated from NMR.

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.

Chemical shifts assignments



^{1}H–NMR of the Cl–PCL–Cl bearing disulfide linkage:



SEC of Cl–PCL–SS–PCL–Cl: