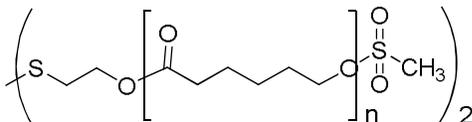


Sample Name:
**(α,ω -di-Methanesulfonyl)-terminated
 Poly(ϵ -caprolactone), bearing dithiodiethanol core**

Sample # **P20006H-CL2MeSdisulf**

Structure:

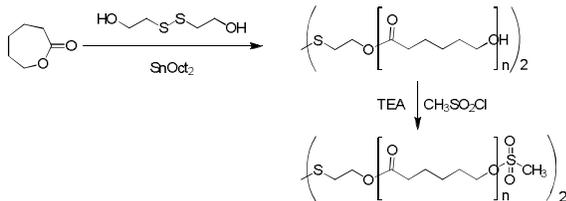


Composition:

$M_n \times 10^3$	PDI
$\text{CH}_3\text{SO}_2\text{-PCL-SS-PCL-SO}_2\text{CH}_3$	
6.5 (by NMR)	1.3
SS / Mesylate functionality $\geq 90\%$	

Synthetic Procedure:

(-S-PCL-SO₂CH₃)₂ is prepared by ring-opening polymerization of ϵ -caprolactone using disulfide-based initiator, followed by reaction with methanesulfonyl chloride. The scheme of the reaction is illustrated below:



Characterization:

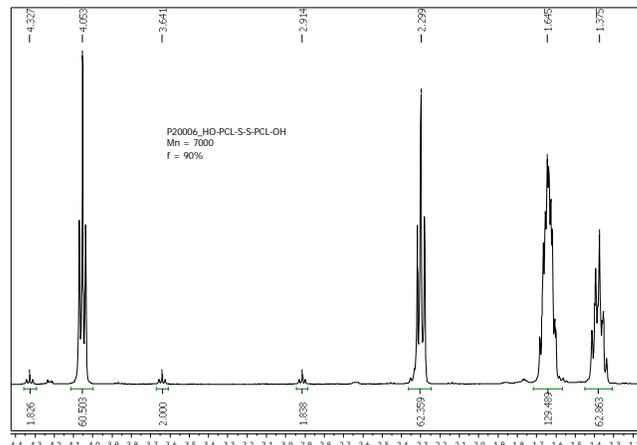
PCLs bearing the above functionalities were analyzed by size exclusion chromatography polydispersities (PDI).

Completeness of mesylate functionalization was judged from disappearance of the peak at 3.64 ppm and/or by comparison of the peaks at 2.99 and 4.21 ppm.

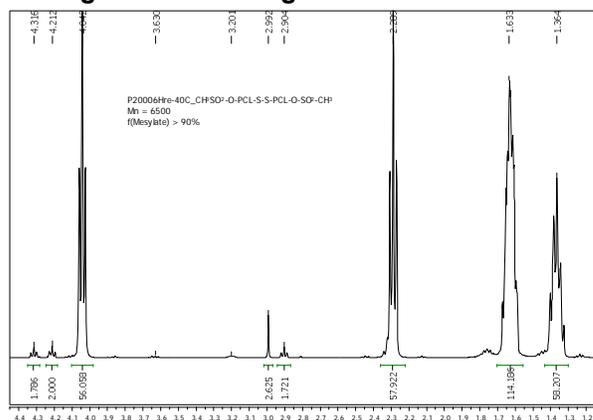
Solubility:

Poly(ϵ -caprolactone) is soluble in CHCl₃, Acetone, THF, insoluble in methanol, ethanol. Precipitated from Acetone or CHCl₃ into hexane/EtOH or ether/EtOH.

¹H-NMR (500 MHz, CDCl₃) of PCL bearing disulfide linkage:



¹H-NMR (500 MHz, CDCl₃) of CH₃SO₂-PCL-SO₂CH₃ bearing disulfide linkage:



SEC elugram of precursor HOPCL-SS-PCLOH:

