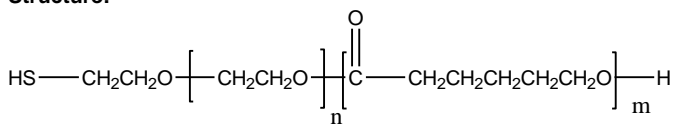


**Sample Name:**

**Thiol end functionalized Poly(ethylene oxide -b- ε-caprolactone)**

**Sample #: P8738- SHEOCL**

**Structure:**

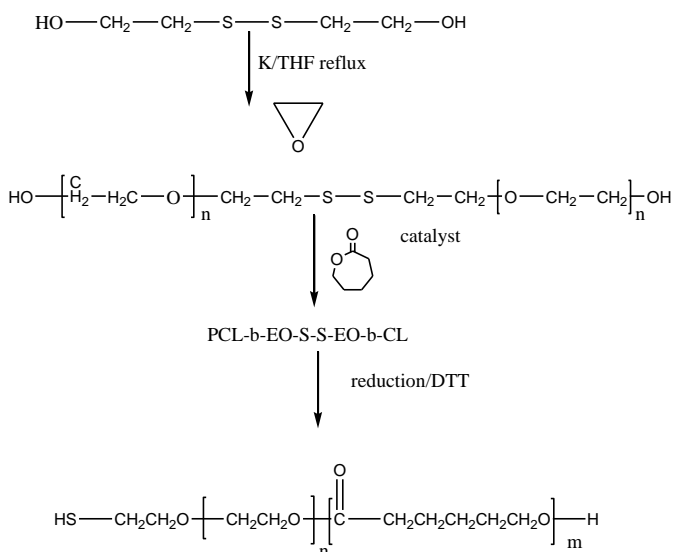


**Composition:**

Mn x 10 <sup>3</sup>	PDI	SH functionality
SHPEG-b-PCL		
2.5-b-7.5	1.6	>80%

**Synthesis Procedure:**

SH- end functionalized Poly(ethylene oxide -b- ε-caprolactone) is prepared by living anionic polymerization of ethylene oxide and coordination polymerization of ε-caprolactone. The scheme of the reaction is illustrated below:

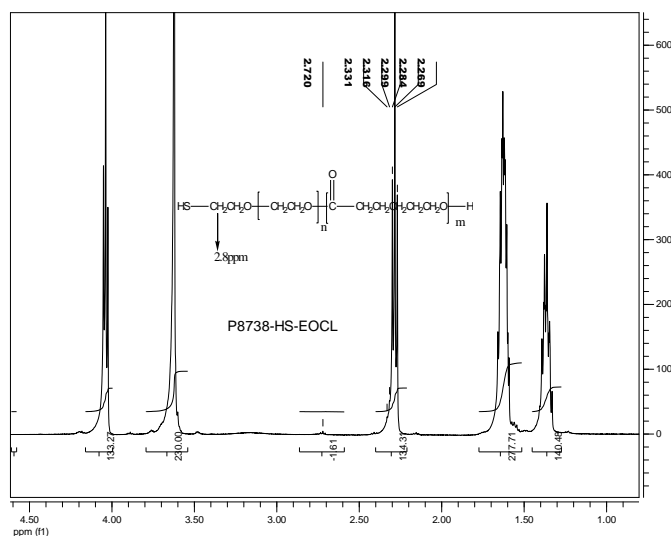


**Characterization:**

An aliquot of the anionic poly(ethylene oxide) block was terminated before addition of caprolactone and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The polymer obtained at each step and the final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the ethylene oxide protons at about 3.6 ppm with the ε-caprolactone protons at about 4.1 ppm.

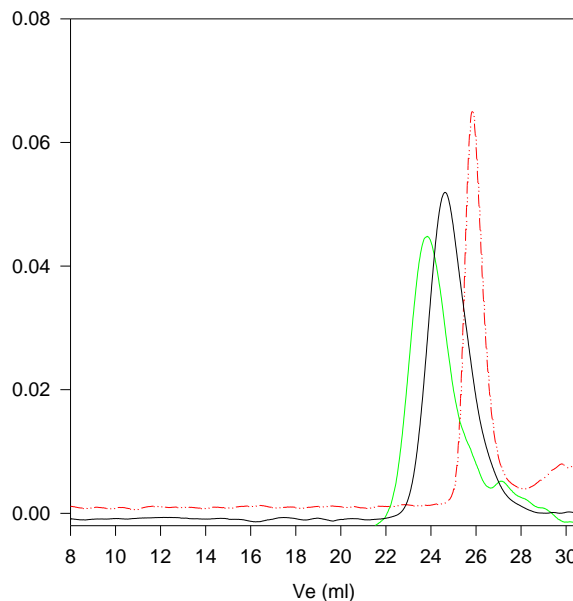
Thiol end functionalized Poly(ethylene oxide -b- ε-caprolactone) is soluble in CHCl<sub>3</sub>, THF, and precipitated out from cold ethanol, diethyl ether.

## <sup>1</sup>H-NMR Spectrum of the polymer



## SEC of the block copolymer:

### P8738- SHEOCL



Size exclusion chromatography:

— Poly(ethylene glycol) bearing disulfide linkage in the center, Mn=5000, Mw=5500, PI=1.10

— Block Copolymer PCL-PEG-b-CL Bearing disulfide linkage: Mn : (5000)-b-PCL(15600), PI=1.6 after reduction: SH-EO-b-CL: Mn 2500-b-7500 Mw/Mn; 1.6