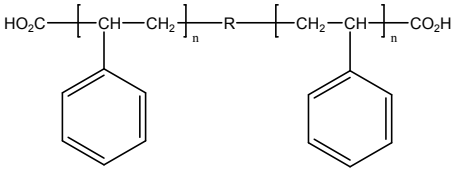
Sample Name:

α,ω-Carboxy Terminated Polystyrene

Sample #: **P11386-S2COOH**

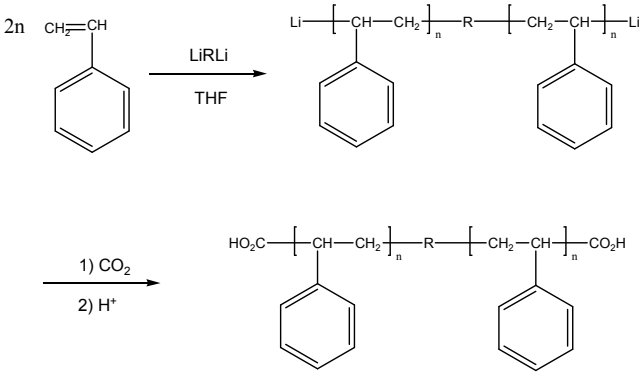
Structure:



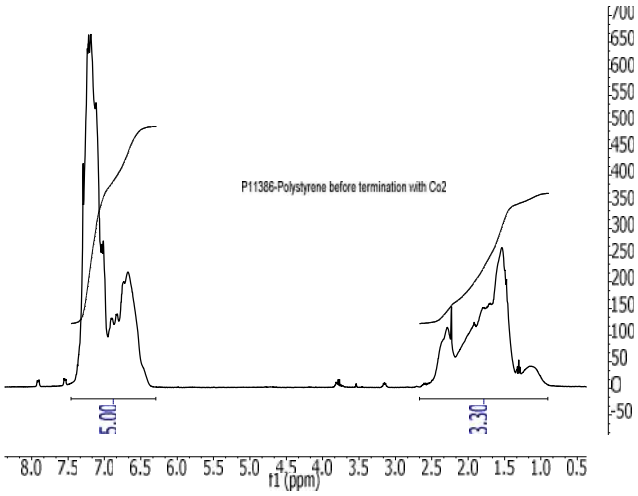
Composition:

Mn x 10^3	PDI
1.5	1.3

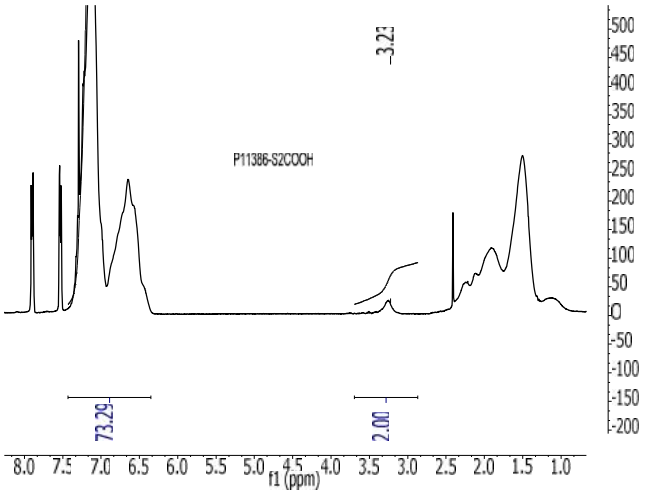
Synthesis Procedure:
The functionalized polymer was prepared by anionic living polymerization of styrene using bifunctional as initiator in THF followed by terminating the polymerization reaction with dried CO_2. The scheme of the reaction is illustrated below:



Characterization:
The molecular weight and polydispersity index of this polymer were determined before the addition of the carboxy function by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. Polymer functionality was determined by the titration with NaOH using phenolphthalein as the indicator.



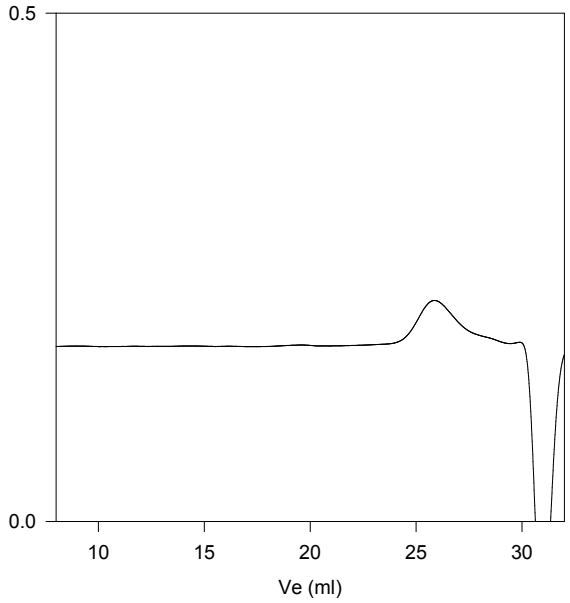
HNMR after termination with CO2:



Solubility: Polymer is soluble in THF, Dioxane, CHCl3 and precipitated out from methanol/water, and in cold hexane.

SEC of Sample:

P11386-S2COOH



Size exclusion chromatography of α,ω-dicarboxy terminated polystyrene before termination with CO_2:

M_n=1500, M_w=190, PI=1.3

functionality=1.95 by titration: