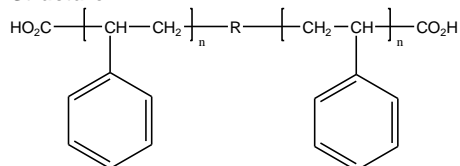


Sample Name:
 α,ω -Carboxy Terminated Polystyrene

Sample #: P8048-S2COOH

Structure:

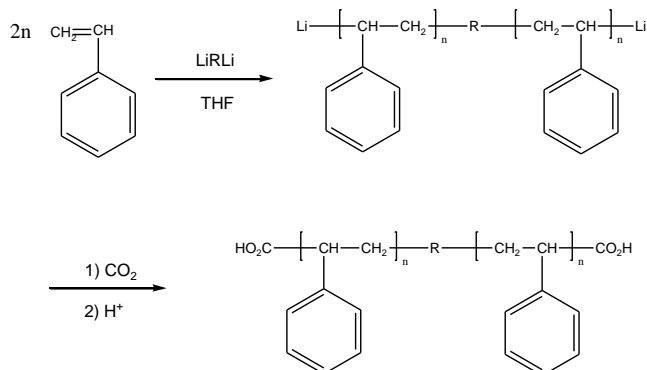


Composition: functionality over 1.90

Mn x 10 ³	PDI
3.0	1.10

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 CO₂. 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. In our columns the polymer after termination with CO₂ the elution is retarded. This is because of the strong interaction with the column packing material. Furthermore the Mw/Mn broadens because of that reason.

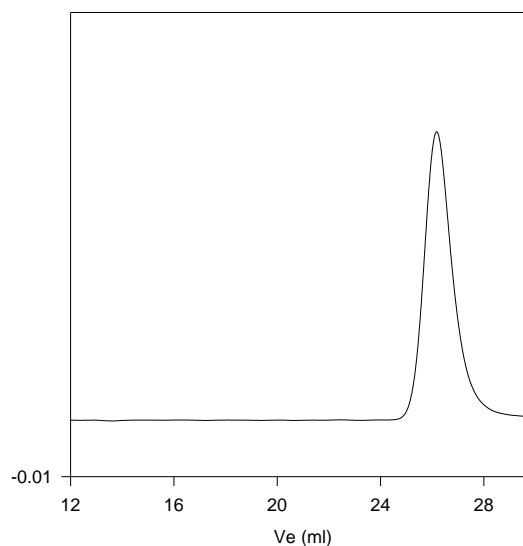
Polymer functionality was determined by the titration with NaOH using phenolphthalein as the indicator.

Solubility:

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

SEC of Sample:

P8048-S2COOH



Size exclusion chromatography of α,ω -dicarboxy terminated polystyrene
 This is before terminated with CO₂.

M_n=3000, M_w=3300, PI=1.10, functionality=1.90