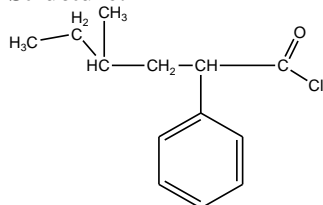


Sample Name:
Mono carboxy Chloride Terminated Polystyrene

Sample #: **P18909B-SCOCI**

Structure:



Composition:

Mn x 10 ³	PDI
2.3	1.10
Functionality %	99

Synthesis Procedure:

Carboxy Terminated Poly(styrene) was prepared by anionic living polymerization of styrene in THF followed by termination with dried CO₂.

Characterization:

The molecular weight and polydispersity index of this polymer were determined before addition of the CO₂H function, by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. Polymer functionality was determined by titration with NaOH using phenolphthalein as the indicator.

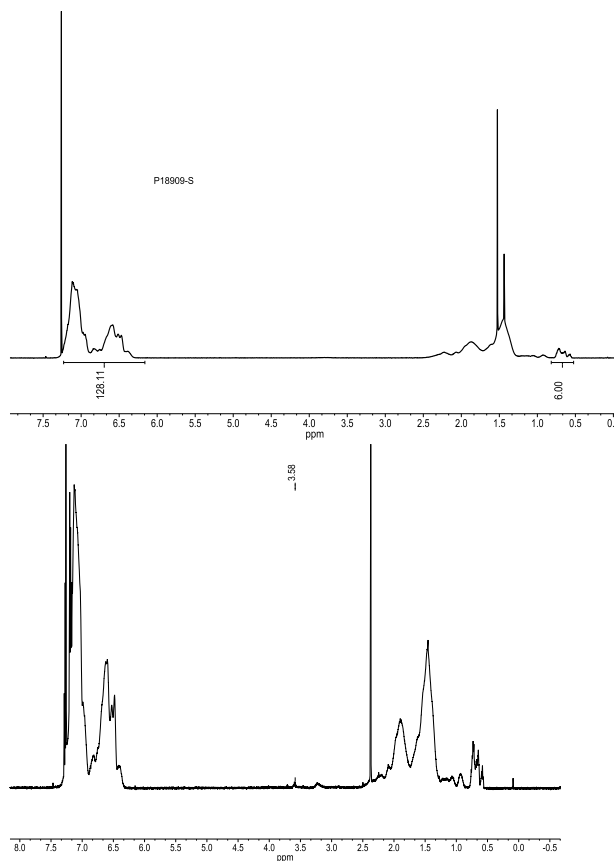
Solubility:

Polymer is soluble in toluene, THF, CHCl₃ and can be precipitated in water and cold methanol.

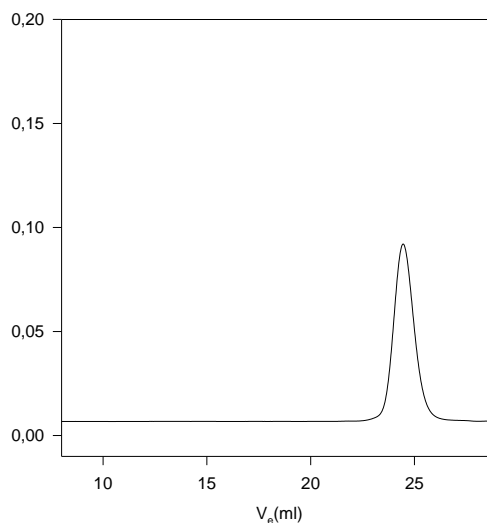
Comparison of T_g between polystyrene and carboxy terminated polystyrene

The glass transition temperature (T_g) between polystyrene (PS) and carboxy terminated polystyrene (PSCOOH) both having M_n of 2000 are compared at heating rate of 10°C/min. It has been found that the T_g of PSCOOH was 15°C higher (79°C) than the corresponding PS (64°C).

H NMR:



SEC of Sample:



Size exclusion chromatography of polymer in THf at 30 oC

1. PS-COCl Mn ≈2,300 Mw: 2,400 Mw/Mn:1.10