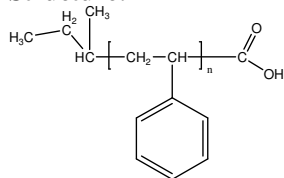


Sample Name:
Mono carboxy Terminated Polystyrene

Sample #: **P18872-SCOOH**

Structure:



Composition:

Mn x 10 ³	PDI
10.5	1.15
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.

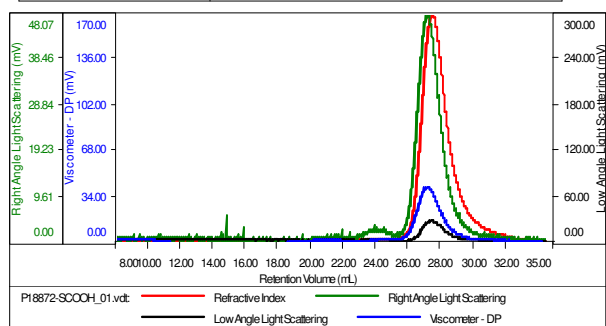
Comparison of T_g between polystyrene and carboxy terminated polystyrene

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). Thermograms for both samples are shown below:

SEC of Sample:

Sample ID: P18872-SCOOH

Concentration (mg/mL)	7.7040
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-0903-2014-0000.vom
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P18872-SCOOH_01.vdt	10,668	12,311	12,474	1.154	0.1655