

Sample Name: **Polystyrene grafted with poly acrylic acid**

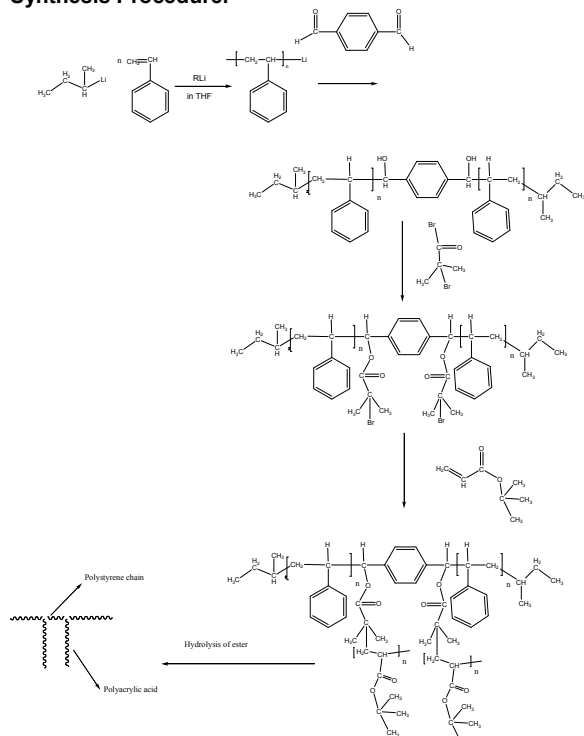
Sample #: **P18121BB-SAAcomb**

Structure:

Composition:

Mn x 10 ³ (Main Chain) Polystyrene	Mn x 10 ³ (Graft Chain) Poly acrylic acid	Total # of branches	Mw/Mn (Total)
10.0	1.8	2	1.25

Synthesis Procedure:



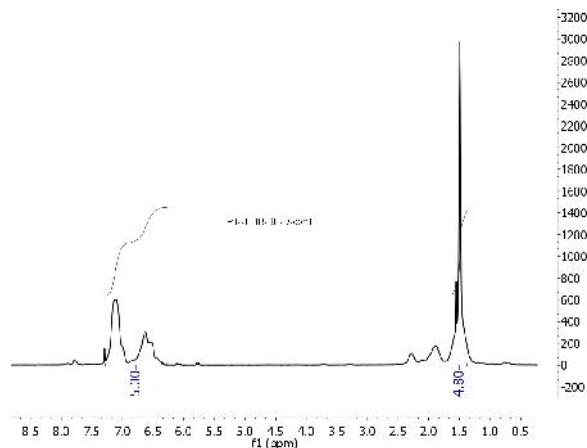
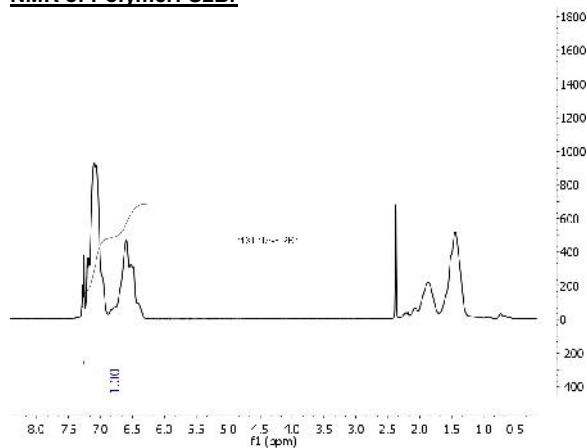
Characterization:

The molecular weight and polydispersity index (PDI) of polymers are obtained by size exclusion chromatography. The composition of grafting polymer is determined by NMR.

Solubility:

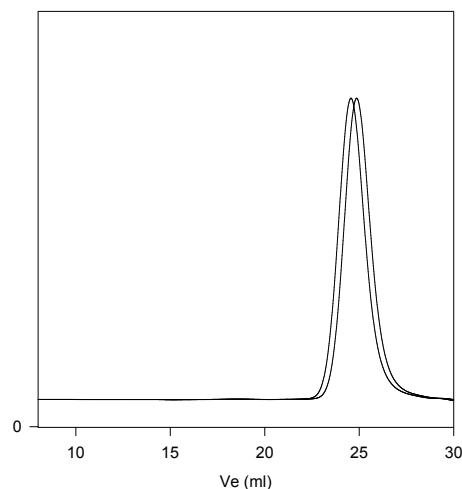
Polystyrene-g-poly(t-butyl acrylate) is soluble in THF, DMF, chloroform, and Toluene. It precipitates from methanol-water.

NMR of Polymer: **S2Br**



SEC of Polymer:

P18121B-StBuA comb for P18121BB-SAAcomb



Size Exclusion chromatography of poly (styrene-graft-tert.Butyldacrylate):

Graft was prepared by backbone first and controlled radical polymerization of t-butyl acrylate: # of branches 2
Mn total of Pt BuA: 6,200 Each brach 3,100
After Hydrolysis of each branch Poly acrylbc acid Mn 1800 Mw/Mn =1.20