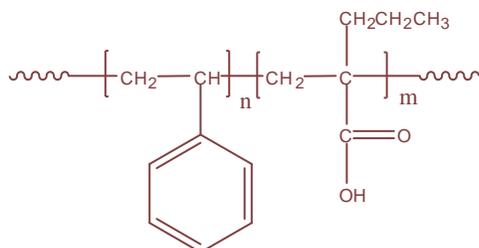


Sample Name: Poly(styrene-b-propylacrylic acid)

Sample #: P6827-SPrAA

Structure:

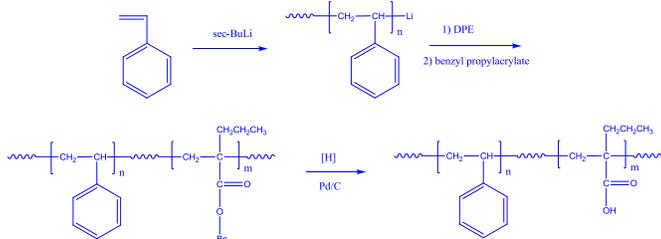


Composition:

Mn x 10 <sup>3</sup> PS-b-PPrAA	PDI
11.5-b-7.3	1.18

Synthesis Procedure:

Poly(styrene-b-propylacrylic acid) is prepared by living anionic polymerization with sequence addition of styrene followed by benzyl propylacrylate. The obtained polymer is hydrolysed in the presence of catalyst under hydrogen. The reaction scheme is shown below:



Characterization:

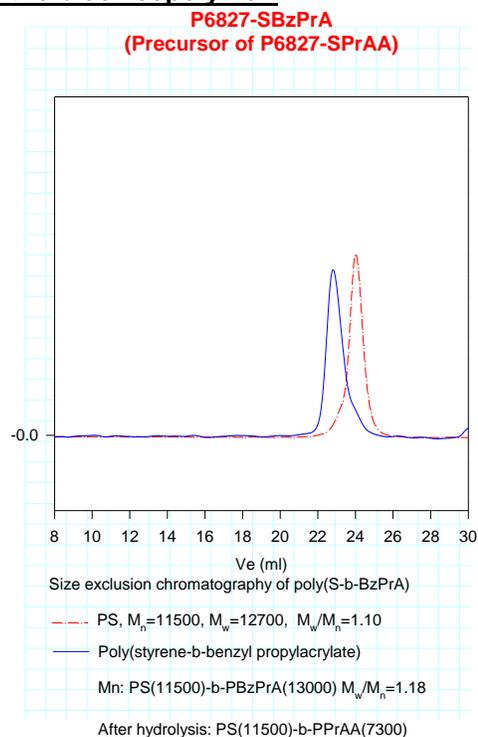
An aliquot of the polystyrene block was terminated before addition of propylacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy or on line SEC with light scattering detectors. Block copolymer PDI is determined by SEC.

The hydrolysis of the benzyl ester to acid was followed by NMR spectroscopy by disappearance of characteristic peak at 4.9 of benzyl group.

Solubility:

Poly(styrene-b-propylacrylic acid) is soluble in THF, dioxane and also in methanol (depending on the compositions with a short segment of polystyrene with long segment of poly propylacrylic acid). The polymers is precipitated out from ether, hexane.

SEC of the block copolymer:



NMR of the block copolymer:

