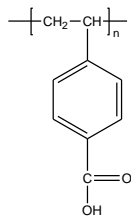


Sample Name: Poly(4-vinyl benzoic acid)

Sample #: P42995A-VBA

Structure:

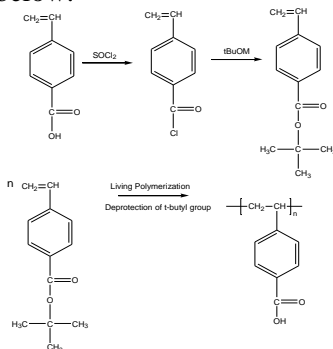


Composition:

Mn x 10 ³	PDI
4.0	1.12
T _g (°C)	245

Synthesis Procedure:

Poly(4-vinyl benzoic acid) is synthesized by making the t-butyl vinylbenzoate monomer followed by polymerization (controlled radical process using TEMPO-AIBN) and hydrolysis of the t-butyl ester group. The reaction scheme is shown below.



Characterization:

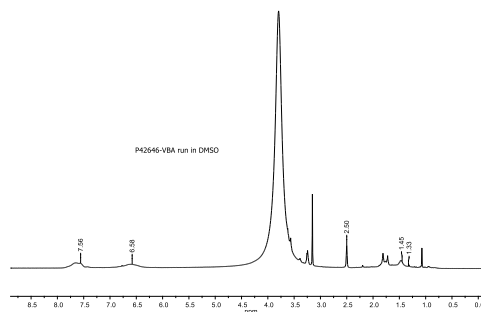
The molecular weight and polydispersity index (PDI) of poly(t-butyl vinylbenzoate) are obtained by size exclusion chromatography. The molecular weight of Poly(4-vinyl benzoic acid) is calculated from poly(t-butyl vinylbenzoate).

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

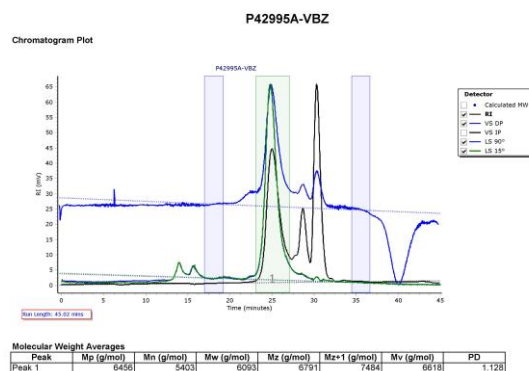
Solubility:

Polymer is soluble in DMF, MeOH and EtOH. It precipitates from water and hexanes.

¹H-NMR spectrum of the product:

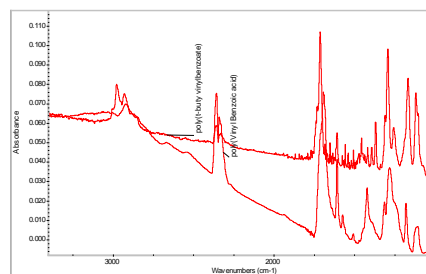


SEC elugram of Homopolymer poly(t-butyl vinylbenzoate):



After Hydrolysis of ester to acid: Mn 4200 Mw/Mn 1.04

FTIR of the product:



DSC thermogram for the polymer:

