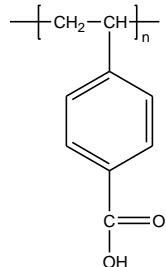


Sample Name: Poly(4-vinyl benzoic acid)

Sample #: P7137-VBA

Structure:

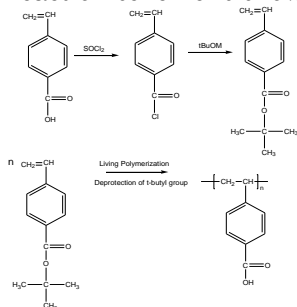


Composition:

$M_n \times 10^3$	PDI
4.3	1.3
T_g ($^{\circ}C$)	245

Synthesis Procedure:

Poly(4-vinyl benzoic acid) is synthesized by making the t-butyl vinylbenzoate monomer (controlled Radical process using TEMPO--AIBN) followed by polymerization 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).

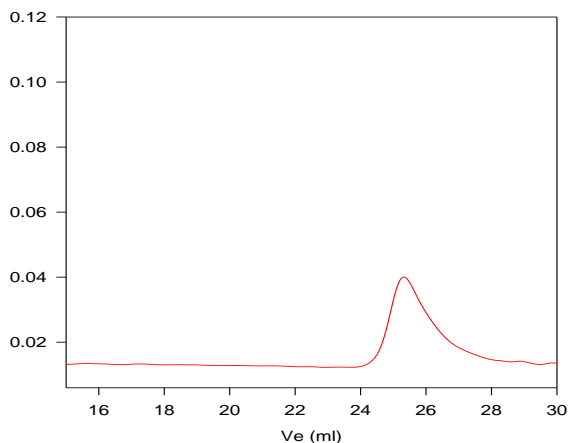
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of $10^{\circ}C/min$. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:

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

SEC of Homopolymer poly(t-butyl vinylbenzoate):

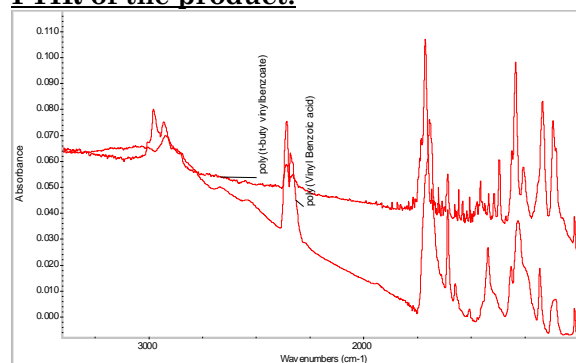
P7137-1-tBuVB



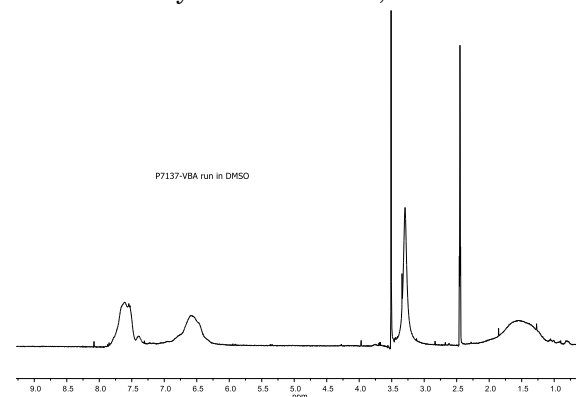
Size exclusion chromatograph (polystyrene standard)

$M_n=5900$, $M_w=7700$, $PI=1.3$

FTIR of the product:



HNMR of Poly VBA in DMSO;



DSC thermogram for the polymer:

