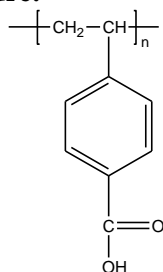


Sample Name: Poly(4-vinyl benzoic acid)

Sample #: P43031A-VBA

**Structure:**



**Composition:**

$M_n \times 10^3$	PDI
500.00	1.9
$T_g$ (°C)	206

**Synthesis Procedure:**

Poly(4-vinyl benzoic acid) is synthesized by making the t-butyl vinylbenzoate monomer by radical process followed by hydrolysis of the t-butyl ester group.

**Purification of the polymer and removal of catalyst residue:**

The catalyst residues were removed by filtration and washing the polymer solution with acidic water up to neutral pH. The solution was freeze dried.

**Characterization:**

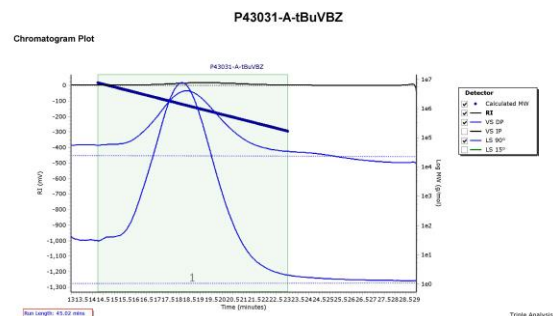
The molecular weight and polydispersity index (PDI) of poly(t-butyl vinylbenzoate) are obtained by size exclusion chromatography. The molecular weight of poly(4-vinyl benzoic acid) is calculated from poly(t-butyl vinylbenzoate). FTIR was carried out for determination of degree of hydrolysis of ester to carboxylic acid.

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:**

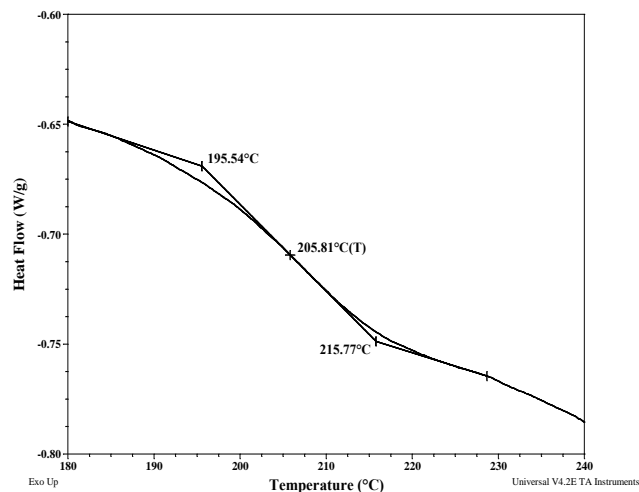
Polymer is soluble in DMF.

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



Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mw (g/mol)	PDI
Peak 1	602468	603546	1316482	2606577	4213349	2316680	1.888

**DSC thermogram for the polymer:**



**FTIR of the polymer:**

