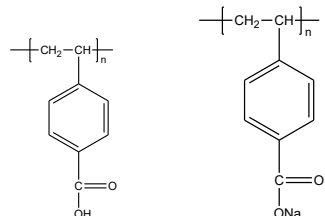


**Sample Name:** Poly(4-vinyl benzoic acid)  
**Sodium salt**

**Sample #:** P3172E-VBANA

**Structure:**

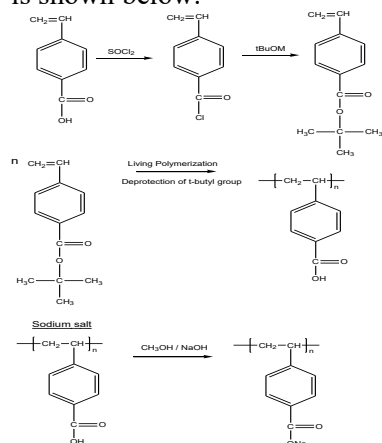


**Composition:**

$M_n \times 10^3$	PDI
14.5	1.4
$T_g$ (°C)	244

**Synthesis Procedure:**

Poly(4-vinyl benzoic acid) is synthesized by making the t-butoxy styrene monomer followed by polymerization and hydrolysis of the t-butoxy group. The reaction scheme is shown below.



**Characterization:**

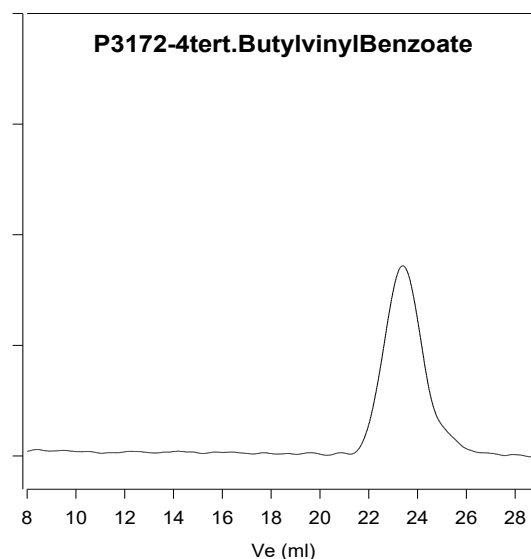
The molecular weight and polydispersity index (PDI) of poly(4-vinyl benzoic acid) are obtained by size exclusion chromatography.

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, THF, toluene and  $CHCl_3$ . It precipitates from methanol, ethanol, water and hexanes.

**SEC of homopolymer:**



Size exclusion chromatograph  
 (precursor for Polyvinyl Benzoic Acid):

$M_n=17200$ ,  $M_w=24000$ ,  $PI=1.40$

Poly vinyl Benzoic Acid  $M_n:12500$   $M_w/M_n=1.40$

Poly Vinylzoic acid Sodium Salt  
 $M_n$  14,500

**DSC thermogram for the polymer:**

