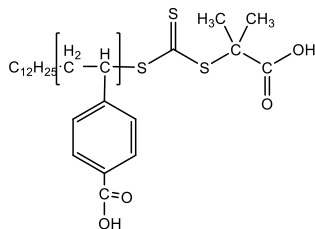


Product Name: Poly(4-vinyl benzoic acid)

Product #: P43034-VBA

Structure:

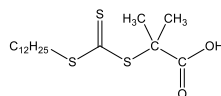


Composition:

$M_n \times 10^3$ (g/mol)	M_w/M_n
6.5	1.10

Synthesis Procedure:

To make poly(4-vinyl benzoic acid), tert-butyl vinylbenzoate monomer was synthesized, followed by its polymerization and further hydrolysis of the tert-butyl ester group. RAFT polymerization process was used.



Chemical Formula: $C_{11}H_{12}O_2$
Molecular Weight: 364.6

Characterization:

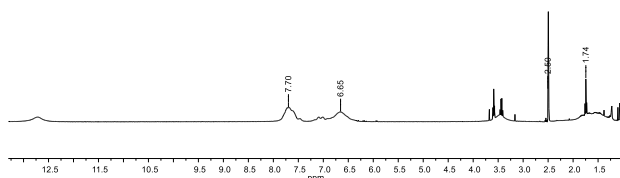
The molecular weight and polydispersity index of poly(tert-butyl vinylbenzoate) were obtained by size exclusion chromatography (SEC) using triple detection method). The molecular weight of poly(4-vinylbenzoic acid) was calculated from poly (t-butyl vinylbenzoate) data. The completeness of hydrolysis was controlled by proton NMR and FT-IR spectroscopies.

Solubility:

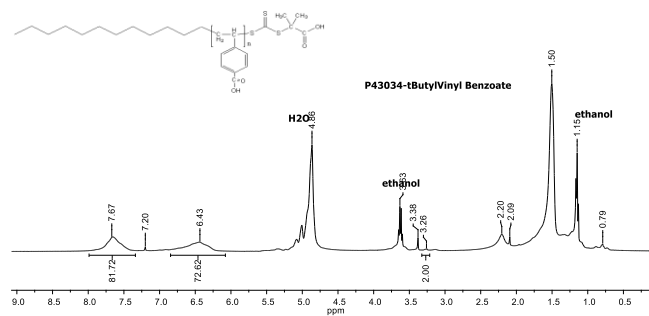
The product is soluble in dimethylformamide, methanol and ethanol. It precipitates from water and hexanes.

$^1\text{H-NMR}$ spectrum of poly(4-VBA) run in DMSO:

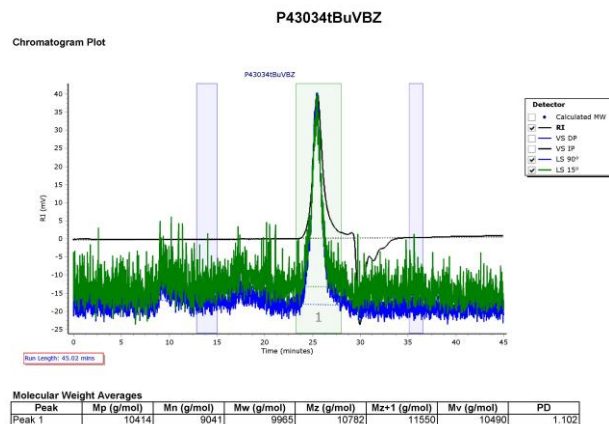
P43034-4VBA run in DMSO



$^1\text{H-NMR}$ spectrum of poly(4-tert.VBA):



SEC of poly(tert-butyl vinylbenzoate):



After hydrolysis of tert-butyl ester group to VBA:
 M_n of poly(4-vinylbenzoic acid): 6,500 (g/mol)

FTIR spectrum of the product:

