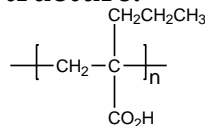


Sample Name:

Poly(α -propyl acrylic acid)

Sample #: P6556D-PrAA

Structure:

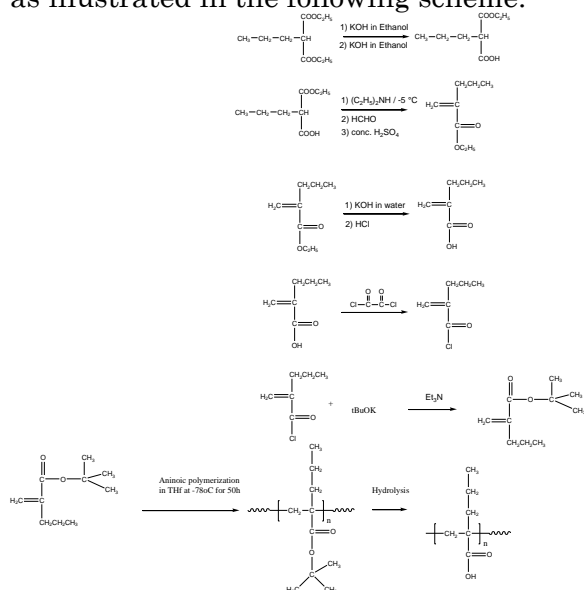


Composition:

$M_n \times 10^3$	PDI
10.0	1.08
T_g ($^{\circ}\text{C}$)	147

Synthesis Procedure:

Poly(α -propyl acrylic acid) is synthesized as illustrated in the following scheme:



Characterization:

The molecular weight and polydispersity index (PDI) of Poly(α -propyl acrylic acid) are obtained by size exclusion chromatography.

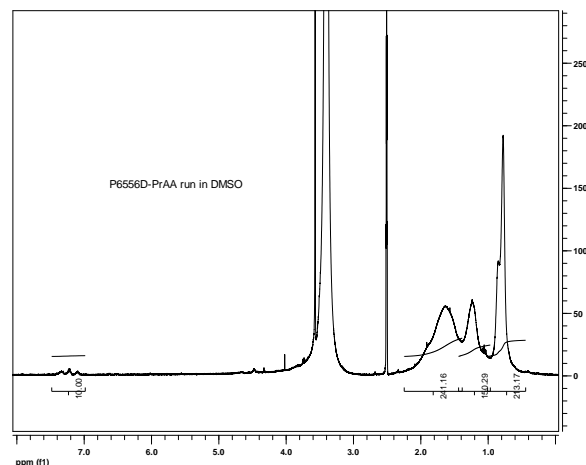
Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of $10^{\circ}\text{C}/\text{min}$. 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:

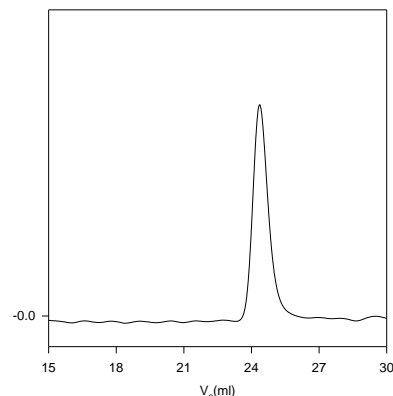
Polymer is soluble in ethanol, methanol THF and dioxane.

^1H NMR of the Polymer:



SEC of Homopolymer:

P6556D-PrtBuA precursor for P6556D-PrAA



Size exclusion chromatography of Poly(α -propyl tert-butyl acrylate)

$M_n = 14,800$; $M_w = 16,100$; $PI = 1.08$

After Hydrolysis of the tert-butyl ester

Poly propyl acrylic acid: $M_n 10,000$ $M_w/M_n 1.08$

DSC thermogram for the polymer:

