

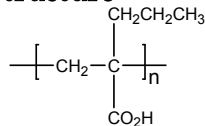
Sample Name:

**Poly( $\alpha$ -propyl acrylic acid)**

**Initiator (PH)3C based**

Sample #: P9976D-PrAA

**Structure:**

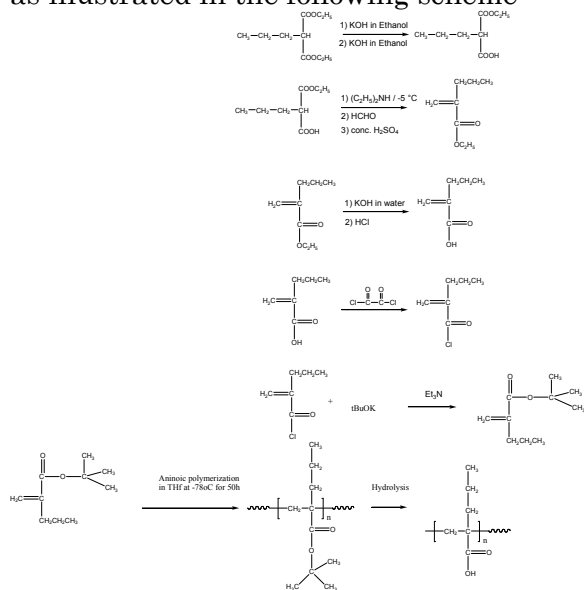


**Composition:**

$\text{Mn} \times 10^3$	PDI
0.65	1.12

**Synthesis Procedure:**

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



**Characterization:**

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

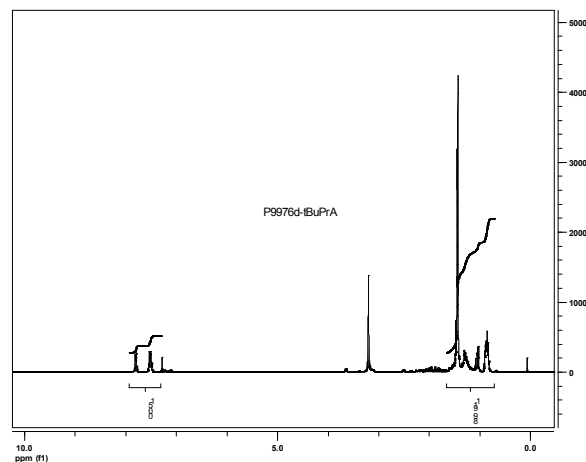
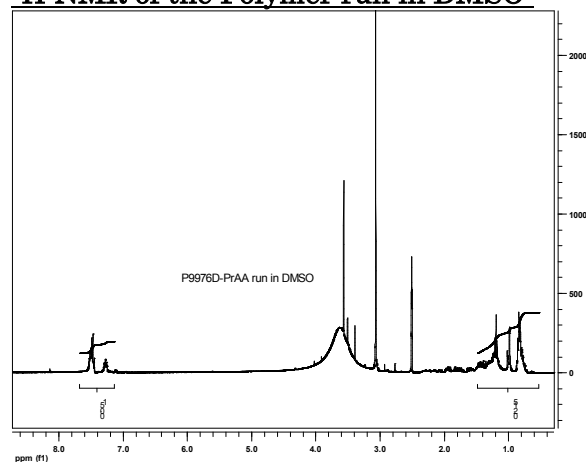
**Thermal analysis:**

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:**

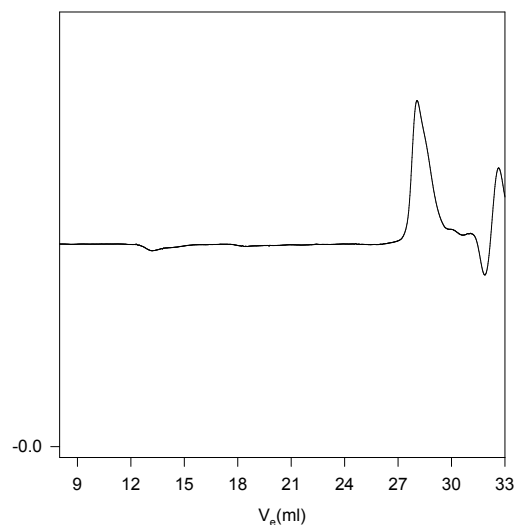
Polymer is soluble in ethanol, methanol THF, Dioxane.

**$^1\text{H}$  NMR of the Polymer run in DMSO:**



**SEC of Homopolymer:**

**P9976D-PrtBuA precursor for P9976D-PrAA**



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

$\text{Mn} = 950$ ;  $\text{Mw} = 1050$ ;  $\text{PI} = 1.12$

After Hydrolysis of the tert.butyl ester

Poly propyl acrylic acid:  $\text{Mn} 650$   $\text{Mw}/\text{Mn} 1.12$