

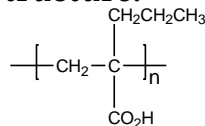
Sample Name:

Poly(α -propyl acrylic acid)

Initiator (PH)2CH based

Sample #: P6383-PrAA

Structure:

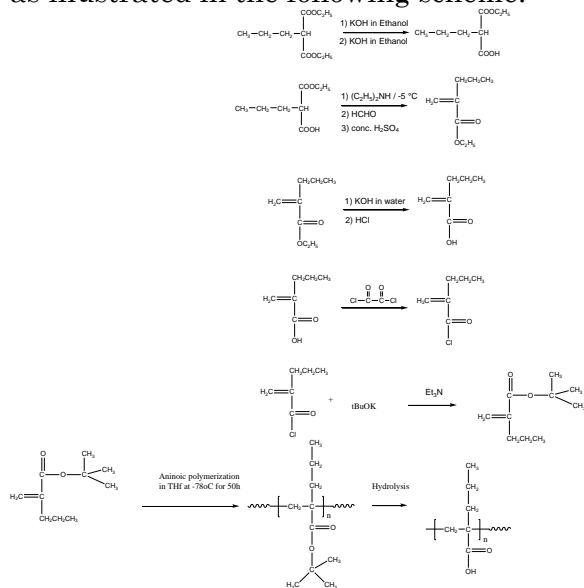


Composition:

$M_n \times 10^3$	PDI
9.5	1.09
$T_g (^{\circ}\text{C})$	143

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.

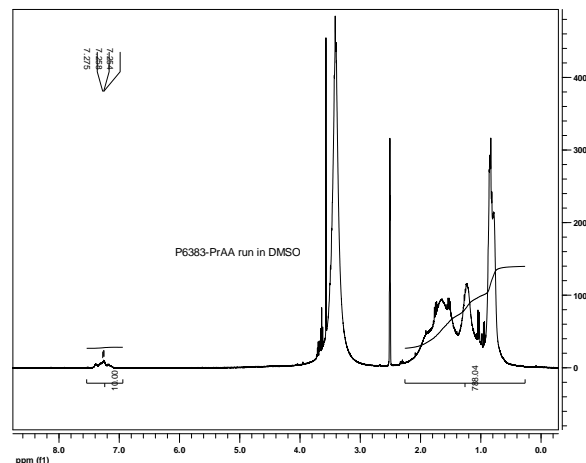
Thermal analysis:

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:

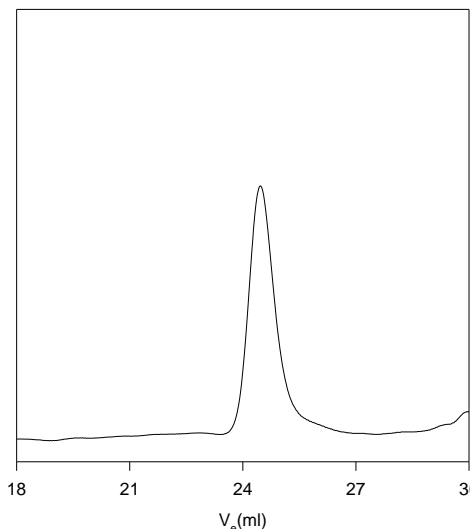
Polymer is soluble in ethanol, methanol THF, Dioxane.

HNMR of the Polymer run in DMSO:



SEC of Homopolymer:

P6383-PrtBuA precursor for P6383-PrAA



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

$M_n = 15000$; $M_w = 16400$; $PI = 1.09$
After Hydrolysis of the tert.butyl ester

Poly propyl acrylic acid: $M_n 9500$ $M_w/M_n 1.09$

DSC thermogram for the polymer:

