

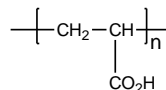
Product Profile

Identification

Product Name: Poly(Acrylic acid)

Product Lot Number: P6612A-AA

Product Chemical Architecture:

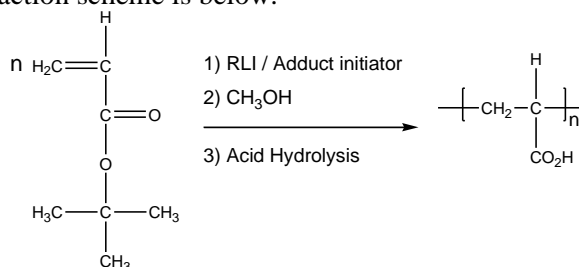


Composition:

Mn (g/mole)	61,500
MW (g/mole)	81,000
MW/Mn	1.32
dn/dc (mL/g)	0.178 in water

Method of Synthesis

Poly(acrylic acid) is synthesized by anionic polymerization of t-butyl acrylate followed by hydrolysis of the tert. butyl group. The reaction scheme is below.



Solubility in different solvents

THF	√	DMF	X
Alcohol	√	CHCl ₃	X
Toluene	X	DMSO	X

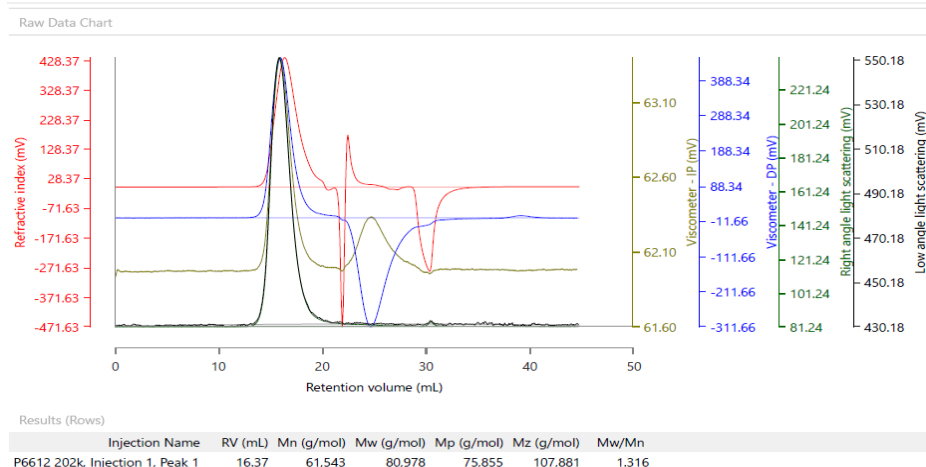
Validation of Architecture

A. Gel Permeation Chromatography (GPC), SEC- Profile:

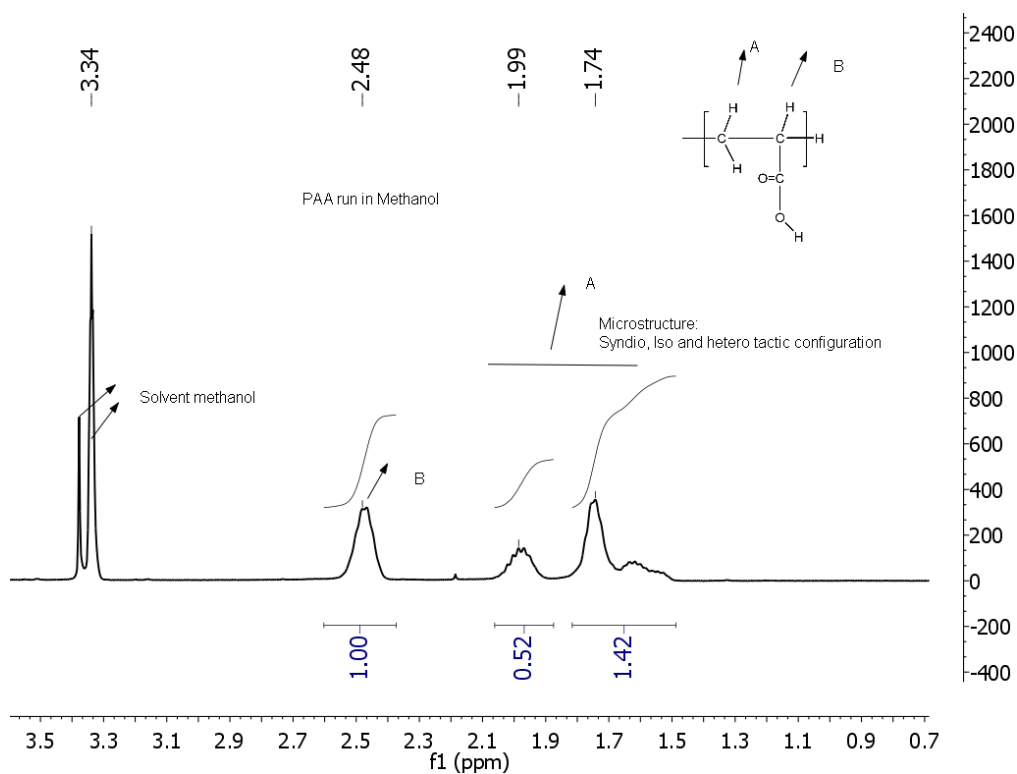
Molecular weights were determined by Malvern OmniSec Reveal & Resolve GPC/SEC System equipped with Triple detector (RI, Viscometer, RALS 90° and LALS 7°) and two columns (A600M General Mixed 300×7.5 mm, Viscotek). 0.25 M NaNO₃ + 0.01M NaH₂PO₄ (PH=7) in water was the eluent. The flow rate was 1.0 ml/min.

Polymer Source

Malvern Panalytical



B. NMR (HNMR) OF PAA general



C. FTIR OF PAA general (compare with Poly (tert. butyl acrylate))

