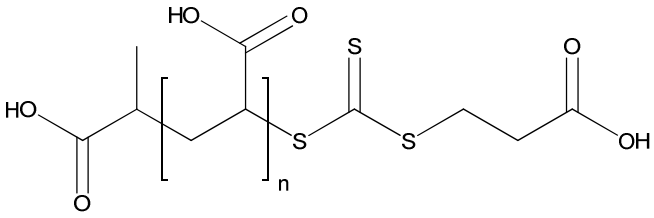
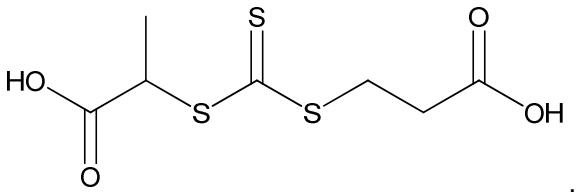
Sample Name: **Poly(Acrylic acid)**
Sample #: P14587A-AA (RAFT)
Structure:



Composition:

Mn x 10^3	Mp x 10^3	Mw/Mn (PDI)
125.0	112.5	1.17

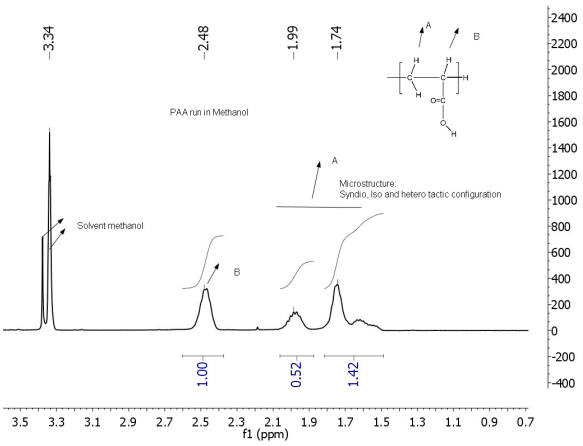
Synthesis Procedure:
Poly(acrylic acid) is synthesized by RAFT polymerization of acrylic acid using 2,2-'-azobis isobutyrate (CAS 2589-57-3) as initiator and xanthate as chain transfer agent:



Characterization:
Polyacrylic acid and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI) using water containing 0.1M $NaNO_3$ and 0.01M NaH_2PO_4 and 4 Vol% acetonitrile as eluent. The molecular weigh can also be verified after converting poly acrylic acid to poly n-butyl acrylate by transesterification process and anal sizing the polymers by SEC in organic phase

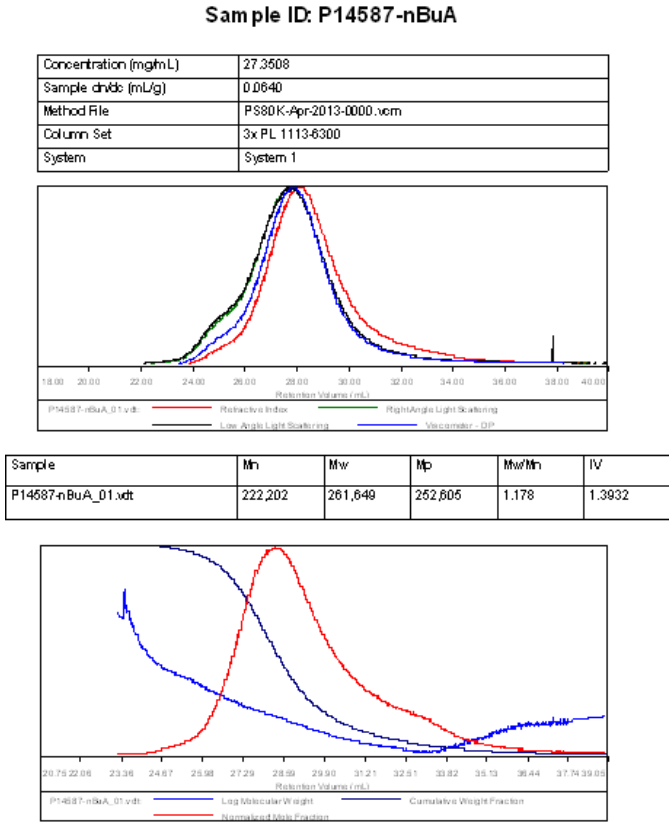
Solubility: Polymer is soluble in water.

^{1}H-NMR Spectrum of the Polymer:

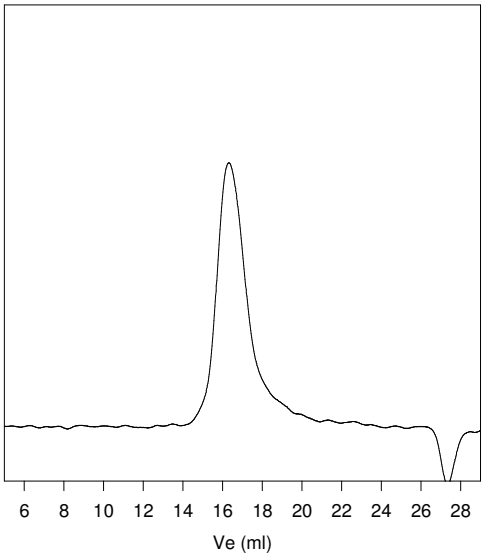


SEC was carried out to convert PAA into Poly n-Butylacrylate to determine molecular weight of the poly acrylic acid

SEC of Sample of the polymer:



P14587-AA (SEC In water at 60 oC)



Size Exclusion Chromatography of the polymer:
PAA: Mn 125,000 Mw: 146,000 Mw/Mn 1.17