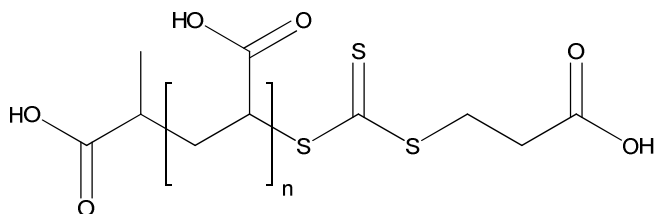


Sample Name: **Poly(Acrylic acid)**

Sample #: P14586-AA (RAFT)

Structure:

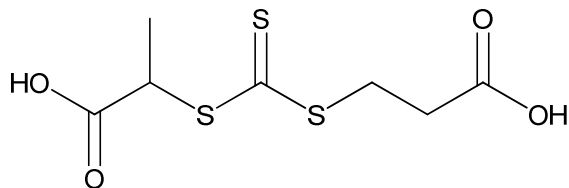


Composition:

| Mn x 10 ³ | Mw/Mn (PDI) |
|----------------------|-------------|
| 32.5 | 1.18 |

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:

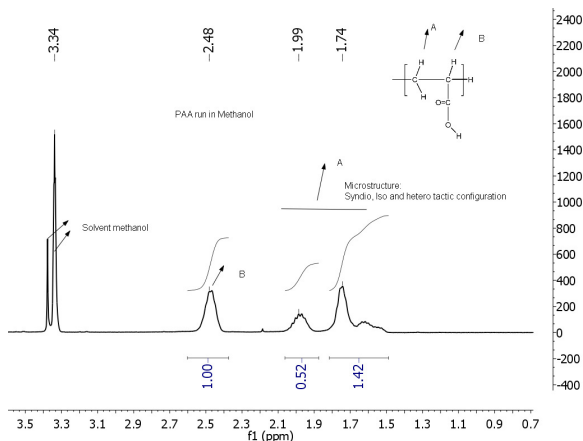


Characterization:

Polyacrylic acid was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI) using water containing 0.1M NaNO₃ and 0.01M NaH₂PO₄ and 4 Vol% acetonitrile as eluent. The molecular weight can also be verified after converting poly acrylic acid to poly n-butyl acrylate by transesterification process and analyzing the polymers by SEC in organic phase

Solubility: Polymer is soluble in water.

¹H-NMR Spectrum of the Polymer:

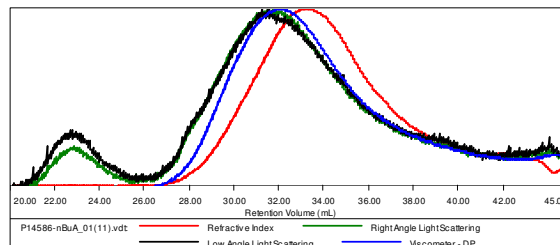


SEC was carried out to convert PAA into Poly n-Butylacrylate to determine molecular weight of the poly acrylic acid

SEC of Sample of the polymer:

Sample ID: P14586-nBuA

| | |
|-----------------------|-------------------------|
| Concentration (mg/mL) | 10.2755 |
| Sample dn/dc (mL/g) | 0.0640 |
| Method File | PS80K-Apr-2013-0000.vcm |
| Column Set | 3x PL 1113-6300 |
| System | System 1 |



| Sample | Mn | Mw | Mp | Mw/Mn | IV |
|------------------------|--------|--------|--------|-------|--------|
| P14586-nBuA_01(11).vdt | 58,110 | 68,763 | 53,822 | 1.183 | 0.4488 |

