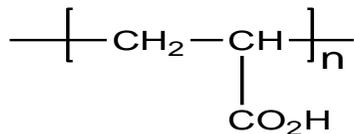


Sample Name: Poly(Acrylic acid)

Sample #: P3622-AA

Structure:

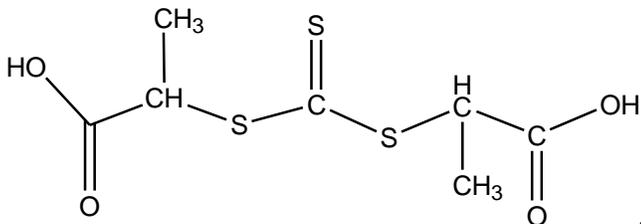


Composition:

Mn x 10 ³	Mw/Mn (PDI)
1.3	1.25

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:



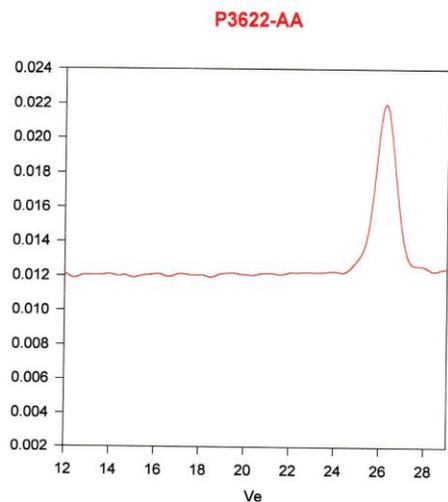
Characterization:

Polyacrylic acid has 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 weigh 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.

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

SEC profile of the polymer:



Size Exclusion Chromatography of Poly tert-butyl acrylate:

$M_n=2280$, $M_w=2860$, $PI=1.25$

Polyacrylic acid: $M_n=1300$ $M_w/M_n=1.25$