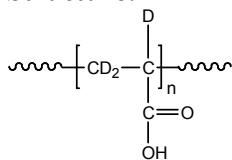


Sample Name: Deuterated Poly (acrylic acid)

Sample #: P16108A-d3PAA

Structure:



Composition:

Mn x 10 ³	PDI
25.0	1.3

Synthesis:

Poly (d3 acrylic acid) is obtained by the anionic polymerization of d3 –tert butyl acrylate, followed by acid hydrolysis of tert butyl ester than neutralized with NaOH in methanol.

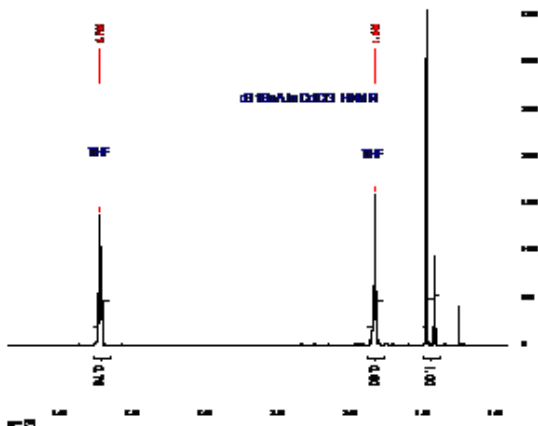
Characterization:

The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co.

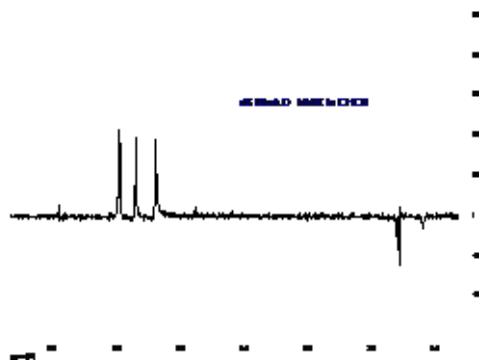
Solubility:

Polymer is soluble in water.

H NMR of the monomer:



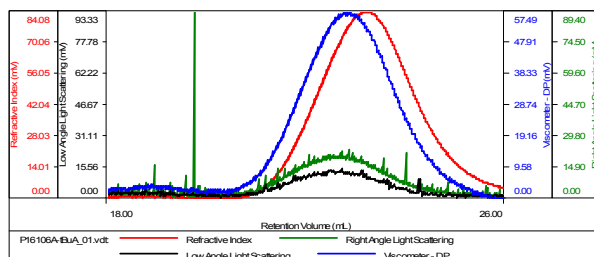
D NMR of the monomer:



SEC of Sample: Precursor for d3PAA

Sample ID: P16106A-tBuA

Concentration (mg/mL)	9.1871
Sample dn/dc (mL/g)	0.0510
Method File	PS80K-29August2016-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Mp (Da)
P16106A-tBuA_01.vdt	44,622	60,686	1.360	0.4269	47,390

References:

1. Ph. Teyssie, Ph. Bayard, R. Jerome, S. K. Varshney, and J. S. Wang, *35th IUPAC International Union of Pure & Applied Chemistry International Symposium on Macromolecules* 1994, 67.
2. R. Fayt, R. Forte, C. Jacobs, R. Jerome, T. Ouhadi, Ph. Teyssie and S. K. Varshney, *Macromolecules*, 1987, 20, 1442-1444.
3. Jerome, R. Forte, S. K. Varshney, R. Fayt, and Ph. Teyssie, "The Anionic Polymerization of Alkylacrylates: A Challenge" in the Recent Advances in Mechanistic and Synthetic Aspects of Polymerization: M. Fontanille and A. Guyot Ed., NATO ASI Series C 215, 101 (1987), CA Vol. 108, 12, 094992.
4. Ph. Teyssie, R. Fayt, C. Jacobs, R. Jerome, L. Leemans, and S. K. Varshney *Am. Chem. Soc., Polym. Prepr.* 1988, 28, 2, 52-53