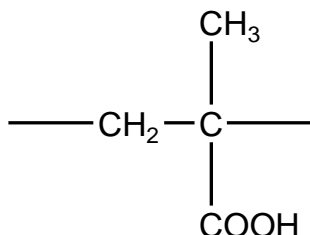


Sample Name:

**Poly(methacrylic acid) rich in isotactic contents**

Sample #: **P3990-MAA (rich in isotactic)**

**Structure:**

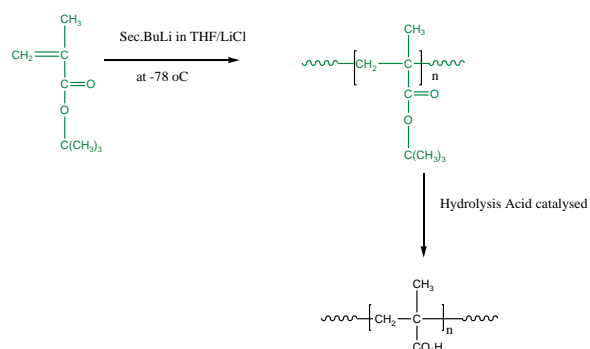


**Composition:**

$M_n \times 10^3$	PDI
3.0	1.3

**Synthesis Procedure:**

Poly(methacrylic ) is synthesized by living anionic polymerization of t-butyl methacrylate followed by hydrolysis of the t-butyl group. The reaction scheme is shown below.



**Characterization:**

The molecular weight and polydispersity index (PDI) of poly(methacrylic acid) were obtained by size exclusion chromatography based on its precursor in the ester form.

**Hydrolysis:**

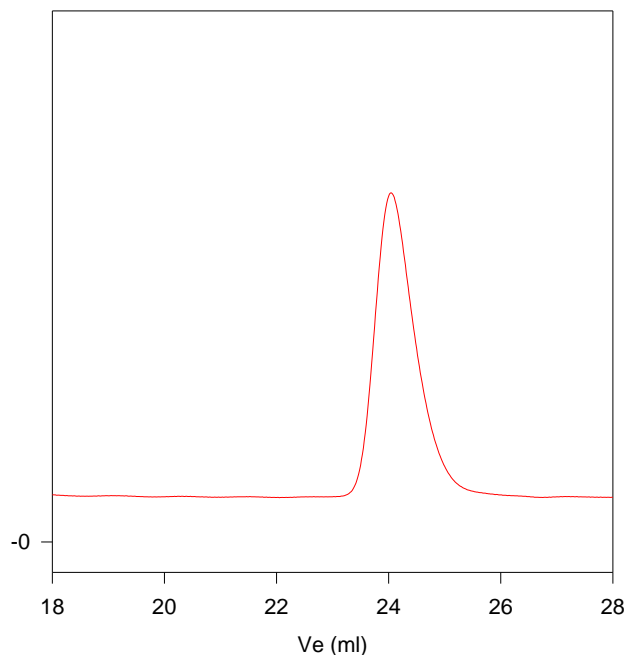
The exchange of tert-butyl ester moiety to COOH was checked by FTIR, disappearance of characteristic peak at 1365cm<sup>-1</sup>.

**Solubility:**

Polymer is soluble in methanol and ethanol.

**SEC of homopolymer:**

**P3990-tBuMA  
(precursor of P3990-MAA)**



Size Exclusion Chromatography of Poly(t-butyl methacrylate)

P3990-tBuMA:  $M_n=4500$ ,  $M_w=5800$ , PI = 1.3

Poly(methacrylic acid):  $M_n= 3000$ , PI = 1.3

Refrence:

**S. K. Varshney**, Z. Gao, Xing Fu Zhong, A. Eisenberg “Effect of Lithium Chloride on the “Living” Polymerization of tert-Butylmethacrylate and Polymer Microstructure Using Monofunctional Initiators” Macromolecules, 1994, 27, 1076.