

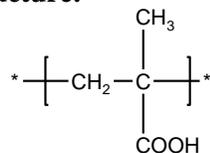
Sample Name:

**Poly(methacrylic acid) rich in syndiotactic**

Sample #: P42970F1-MAA

(rich in syndio contents)

**Structure:**



**Composition:**

$M_n \times 10^3$	PDI
339.0	1.5

**Synthesis Procedure:**

Poly(tert. Butyl methacrylate ) is synthesized by GTP process, followed by hydrolysis of ester.

**Characterization:**

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

**Hydrolysis:**

The removal of tert.butyl ester moiety to COOH was checked by their FTIR, disappearance of characteristics at  $1365\text{cm}^{-1}$ .

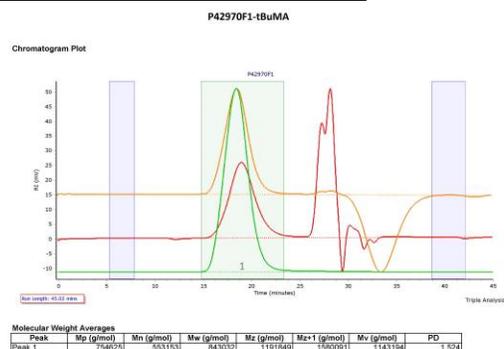
**Thermal analysis:**

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of  $10^\circ\text{C}/\text{min}$ . The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature ( $T_g$ ).

**Solubility:**

Polymer is soluble in methanol and ethanol.

**SEC elugram of Homopolymer:**



**PMAA after Hydrolysis : 339,000**

**References:**

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.