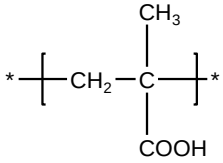
Sample Name:
**Poly(methacrylic acid) rich in syndiotactic**

Sample #: **P43680-MAA**

**Structure:**




**Composition:**

| Mn × $10^3$ | PDI |
|---|---|
| 134.0 | 1.15 |

**Synthesis Procedure:**
Poly(methacrylic acid) is synthesized by living anionic polymerization of t-butyl methacrylate followed by hydrolysis of the t-butyl group.

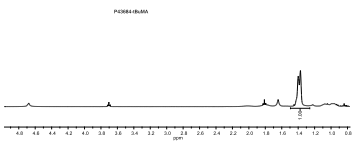
**Characterization:**
The molecular weight and polydispersity index (PDI) of Poly(methacrylic) are obtained by size exclusion chromatography based on its precursor in the ester form.

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

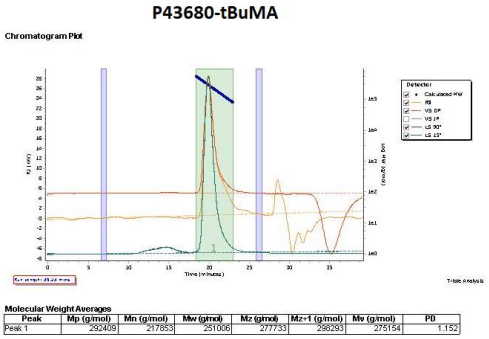
**Thermal analysis:**
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature ($T_g$).

**Solubility**: Polymer is soluble in methanol and ethanol.

**$^1$H-NMR spectrum of PtBuMA before Hydrolysis:**



**SEC elugram of Homopolymer PtBuMA:**




**After Hydrolysis of ester to acid**
**Mn: 134,000**

***Refrences:***

**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.