

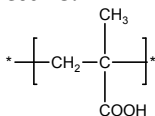
Sample Name:

Poly(methacrylic acid)

Sample #: P10820-MAA

From hydrolysis of PolytBuMA polymer

Structure:



Composition:

| | |
|---|----------|
| Mn x 10 ³ | PDI |
| 602.0 | 1.11 |
| T _g (°C) | 165 |
| Microstructure Syndio:Hetero:iso contents | 40:49:11 |

Synthesis Procedure:

Poly(methacrylic) is synthesized by RAFT process

Characterization:

The molecular weight and polydispersity index (PDI) of Poly(methacrylic) are obtained by size exclusion chromatography in DMF at 45 °C.

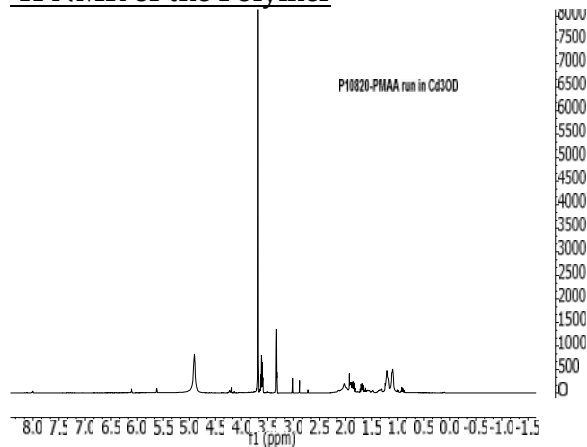
Thermal analysis:

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.

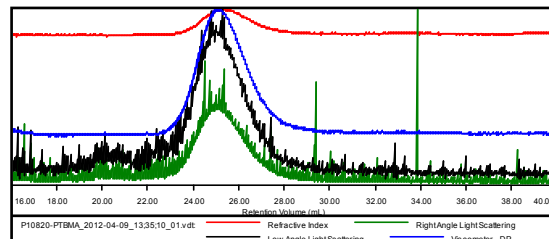
¹H NMR of the Polymer



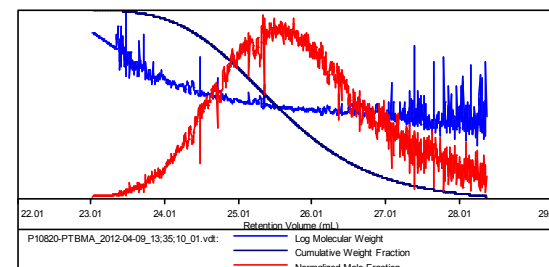
SEC of the homopolymer:

Sample ID: P10820-PtBMA

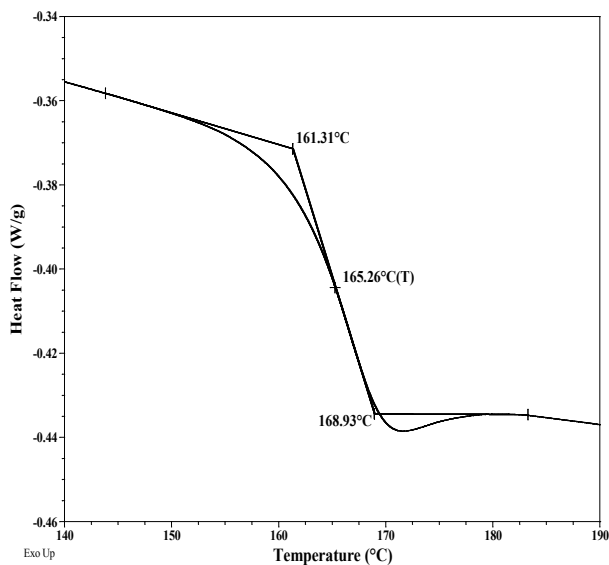
| | |
|-----------------------|-----------------------|
| Concentration (mg/mL) | 0.6771 |
| Sample dn/dc (mL/g) | 0.0760 |
| Method File | PS80-APR2012-0000.vcm |
| Column Set | 3x PL 1113-6300 |
| System | System 1 |



| Sample | Mn (Da) | Mw (Da) | Mp (Da) | Mw/Mn | IV (dL/g) |
|------------------------------------|---------|-----------|---------|-------|-----------|
| P10820-PTBMA_2012-04-09_13:35;10_1 | 993,944 | 1.104 e 6 | 951,137 | 1.111 | 2.4469 |



Thermogram for the polymer:



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.