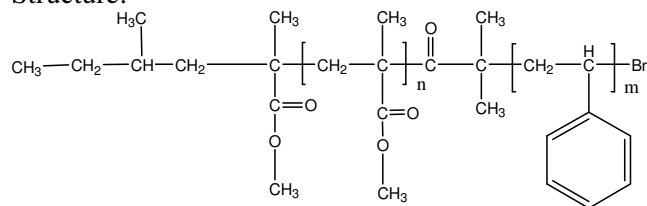


Sample Name: **Bromo terminated Poly(methyl methacrylate-b-Styrene) diblock copolymer (Anionic process and controlled radical process) PMMA : Isotactic rich**

Sample #: **P40015F-MMAS-Br**

Structure:



Composition:

|                                  |      |
|----------------------------------|------|
| Mn $\times 10^3$<br>(MMA-b-S-br) | PDI  |
| 1.0-b-32.0                       | 1.16 |

|                              |                           |
|------------------------------|---------------------------|
| Microstructure of PMMA block | S:H:I contents<br>2:10:88 |
|------------------------------|---------------------------|

|                                     |  |
|-------------------------------------|--|
| T <sub>g</sub> for PS block: 104 °C | T <sub>g</sub> for MMA block: Not distinct |
|-------------------------------------|--|

Synthesis Procedure:

Poly(styrene-b-methylmethacrylate-b-styrene) was prepared by anionic and controlled processes.

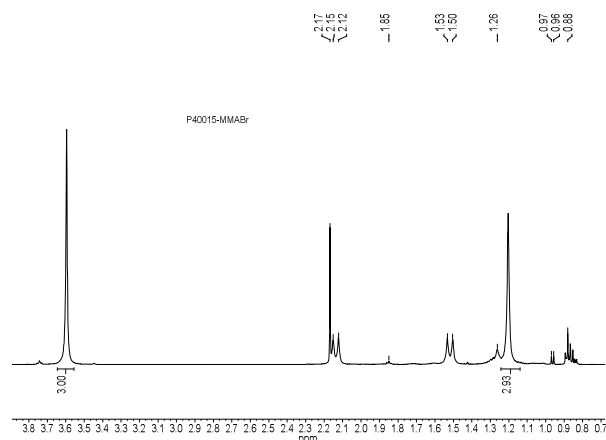
Characterization:

The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector.

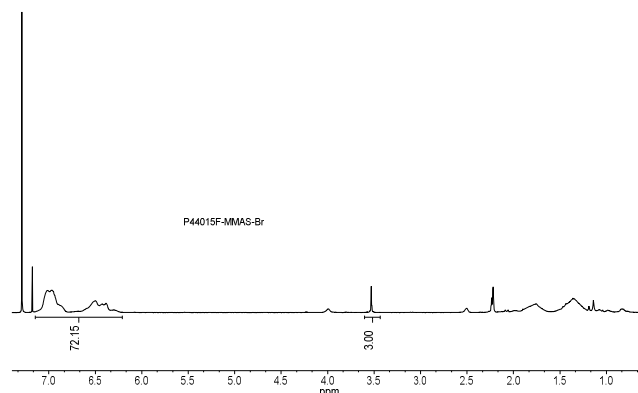
Solubility:

Polymer is soluble in THF, toluene and CHCl<sub>3</sub>. It precipitates from methanol, ethanol, water and hexanes.

<sup>1</sup>H NMR spectrum of MMASBr:



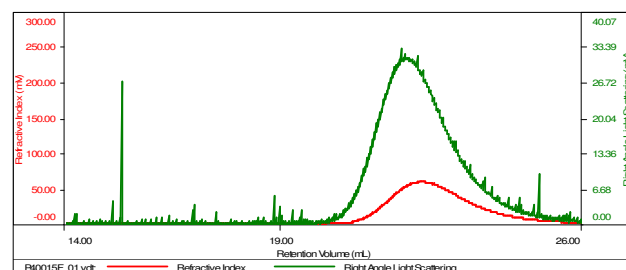
<sup>1</sup>H NMR spectrum of MMASBr:



SEC elugram of the polymer:

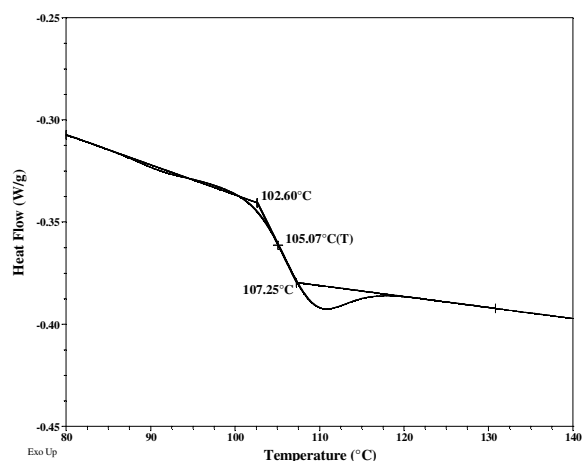
Sample ID: P40015F-MMASBr

|                       |                            |
|-----------------------|----------------------------|
| Concentration (mg/mL) | 3.1244                     |
| Sample dn/dc (mL/g)   | 0.1650                     |
| Method File           | PS80K-4August2016-0000.vcm |
| Column Set            | 3x PL 1113-6300            |
| Solvent               | THF                        |



| Sample         | Mn (Da) | Mw (Da) | Mw/Mn | IV (dL/g) | Mp (Da) |
|----------------|---------|---------|-------|-----------|---------|
| P40015F_01.vdt | 32,420  | 37,640  | 1.161 | 0.1973    | 35,977  |

DSC thermogram for PS block:



Reference:

S.K. Varshney, P. Kesani, N. Agarwal, J. Xin. Zhang, and M. Rafailovich. Synthesis of ABA type thermoplastic elastomers based on Polyacrylates, Macromolecules, 1999, 32,235.