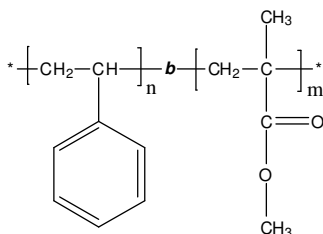


Sample Name: Poly (styrene-*b*-methyl methacrylate)
(PMMA block is predominantly syndiotactic, >78%)

Sample # P19601P-SMMA

Structure:



Composition:

| | |
|---------------------------------|------|
| Mn x 10 ³ S-b-MMA | PDI |
| 190.0-b-280.0 | 1.07 |

| | |
|--------------------------------|-------|
| T _g for PS block: | 107°C |
| T _g for PMMA block: | 133°C |

Synthesis procedure:

The polymer was synthesized by anionic polymerization.

Characterization:

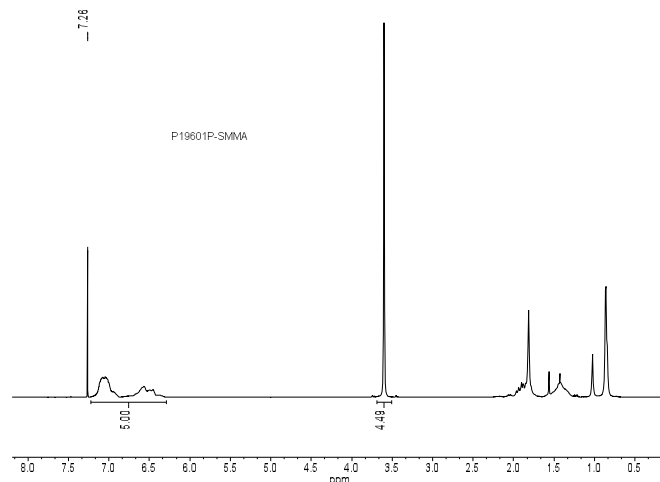
The polymer was characterized by SEC, ¹H NMR, and DSC.

Thermal analysis of the sample was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 15°C/min. The inflection glass transition temperature (T_g) of the sample has been considered.

Solubility:

Poly(styrene-*b*-methyl methacrylate) is soluble in THF, toluene, dioxane, chloroform; and it precipitates from methanol, ethanol, hexanes, water.

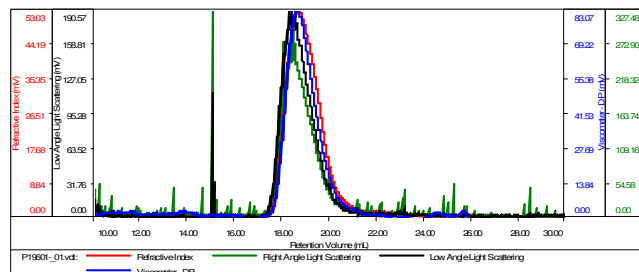
¹H-NMR spectrum of the polymer:



SEC of the polymer in DMF:

Sample IDP19601P-SMMA

| | |
|-----------------------|----------------------------|
| Concentration (mg/mL) | 0.6279 |
| Sample dn/dc (mL/g) | 0.1300 |
| Method File | PS80K-June30-2015-0000.vcm |
| Column Set | 3x PL 1113-6300 |
| Solvent | THF |



| Sample | MW Number Average (Da) | MW Weight Average (Da) | MW at Peak (Da) | Polydispersity | Intrinsic Viscosity (dL/g) |
|---------------|------------------------|------------------------|-----------------|----------------|----------------------------|
| P19601-01.vdt | 470,123 | 494,960 | 540,014 | 1.053 | 5.3158 |

References:

1. S. K. Varshney, R. Fayt, Ph. Teyssie, and J.P. Hautekeer US Patent 5,264,527 (1993)
2. Ph. Teyssie, Ph. Bayard, R. Jerome, S. K. Varshney, and J. S. Wang, *35th IUPAC International Union of Pure & Applied Chemistry International Symposium on Macromolecules* 1994, 67.
3. Ph. Teyssie, R. Fayt, J. P. Hautekeer, C. Jacobs, R. Jerome, L. Leemans and S. K. Varshney *Makromolekular Chemie, Macromol. Symp.*, 1990, 32,61-73.
4. S. K. Varshney, J. P. Hautekeer, R. Fayt, R. Jerome, and Ph.Teyssie *Macromolecules*, 1990, 23, 2618-2622.
5. A. Guyot Ed., NATO ASI Series C 215,101 (1987), CA Vol. 108, 12, 094992.

(v. K-01)