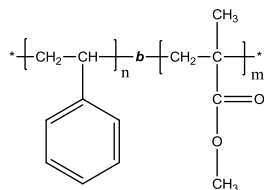


**Sample Name:** Poly (styrene-*b*-methyl methacrylate)  
(PMMA block is predominantly syndiotactic, >78%)

**Sample #:** P40603-SMMA

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> S-b-MMA	PDI
52.0-b-176.0	1.10

T <sub>g</sub> for PS block:	103°C
T <sub>g</sub> for PMMA block:	103°C

**Synthesis procedure:**

The polymer was synthesized by anionic polymerization.

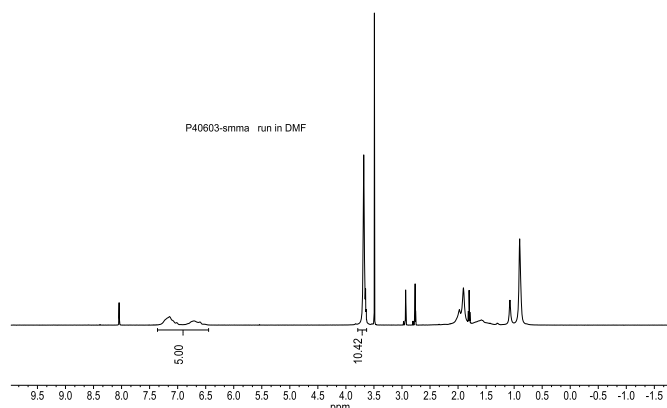
**Characterization:**

The molecular weight and polydispersity index of the polymer were determined by size exclusion chromatography (SEC). The ratio between blocks was calculated from <sup>1</sup>H NMR spectrum.

**Solubility:**

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

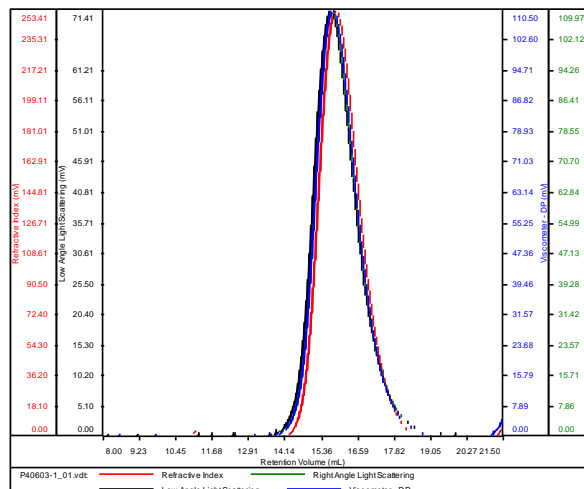
**<sup>1</sup>H NMR spectrum of the polymer:**



**SEC elugram of the Styrene block:**

P40603-S

Conc	18.2249
dn/dc	0.1650
Solvent	DMF w 0.023M LiBr
Flow Rate	0.7000
Method	PS80k-May2017-0000.vcm

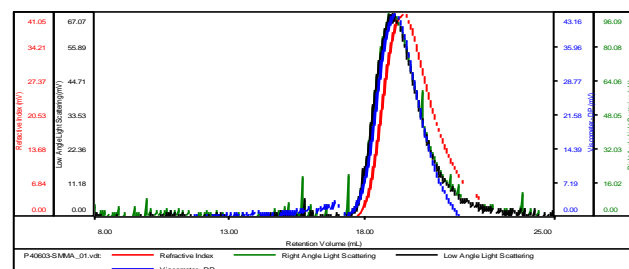


Sample	Mn	Mw	Mp	Mw/Mn	IV
P40603-1_01.vdt	51,921	54,241	50,554	1.045	0.1114

**SEC elugram of the polymer:**

P40603-SMMA

Concentration (mg/mL)	1.0782
Sample dn/dc (mL/g)	0.1230
Method File	PS80K-Feb2017-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Mp (Da)
P40603-SMMA_01.vdt	227,887	252,793	1.109	1.9175	254,405

**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.