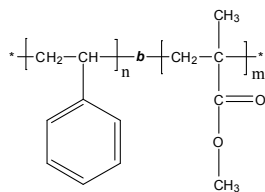


**Sample Name:** Poly (styrene-*b*-methyl methacrylate)  
(PMMA block is predominantly syndiotactic, >78%)

**Sample #:** P40180-SMMA

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> S-b-MMA	PDI
153.0-40.0	1.07

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.

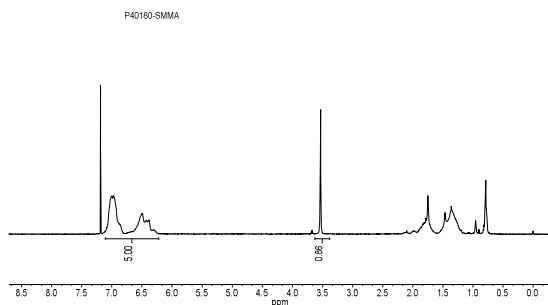
**Characterization:**

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.

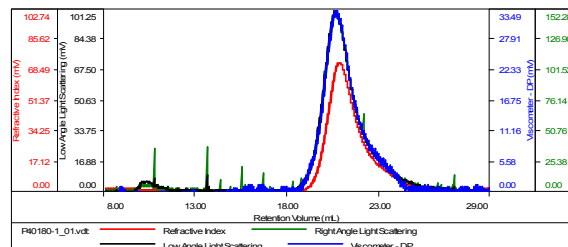
**<sup>1</sup>H NMR spectrum of the polymer:**



**SEC elugram:**

**Sample ID:** P40180-1

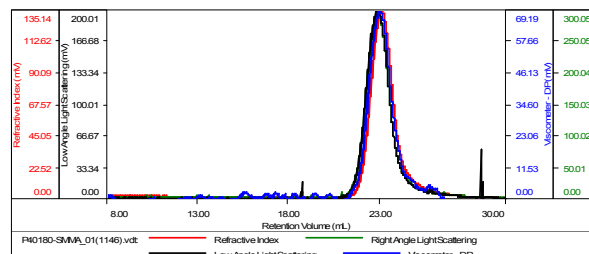
Concentration (mg/mL)	5.3137
Sample div/d: (mL/g)	0.1850
Method File	PS80K-Oct2016-2.0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Mp (Da)
P40180-1_01.vdt	153,822	160,626	1.044	0.3625	151,984

**Sample ID:** P40180-SMMA

Concentration (mg/mL)	9.4519
Sample div/d: (mL/g)	0.1580
Method File	PS80K-Oct2016-2.0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Mp (Da)
P40180-SMMA_01(114).vdt	193,386	207,850	1.075	0.3758	202,807

**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.