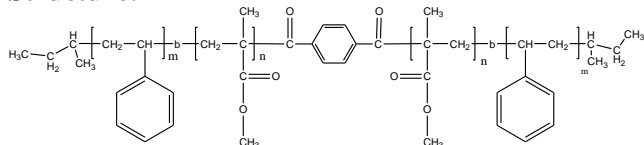


Sample Name:
Poly(Styrene-b-methyl methacrylate-b-Styrene)

Sample #: P11149-SMMAS

Structure:

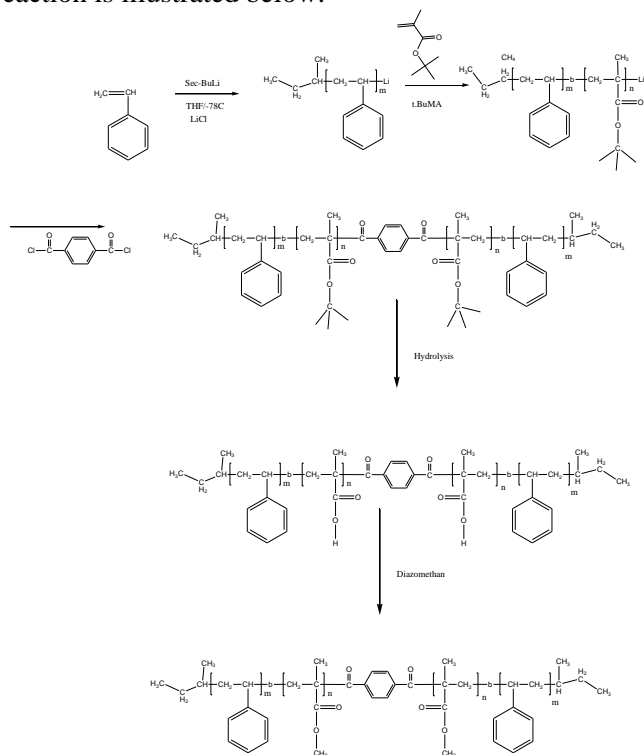


Composition:

Mn × 10 ³ S-b-MMA-S	PDI
80.0-b-213.0-b-80.0	1.20
T _g for MMA block: 113°C	T _g for PS block: 100 °C

Synthesis Procedure:

Poly(styrene-b-methylmethacrylate-b-styrene) is prepared by living anionic polymerization. The details are reported in the reference¹. The scheme of the reaction is illustrated below:



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.

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).

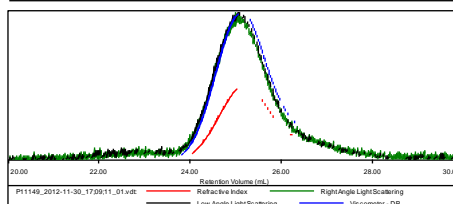
Solubility:

Polymer is soluble in THF, toluene and CHCl₃. It precipitates from methanol, ethanol, water and hexanes.

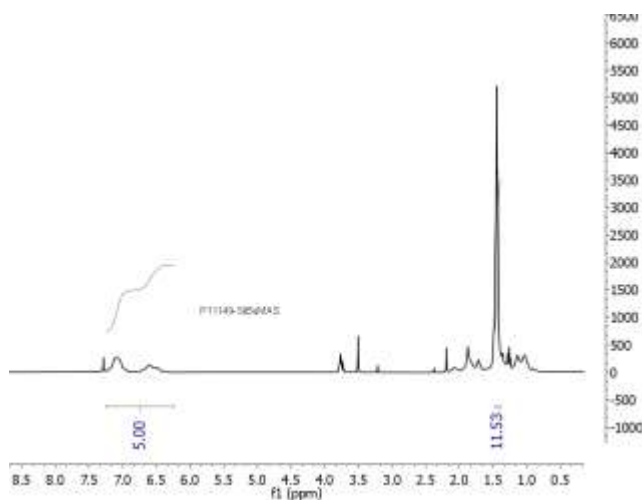
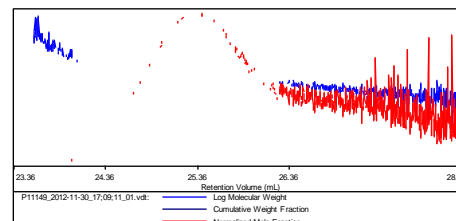
SEC of Sample: StBuMAS triblock copolymer:

Sample ID: P11149-StBuMAS

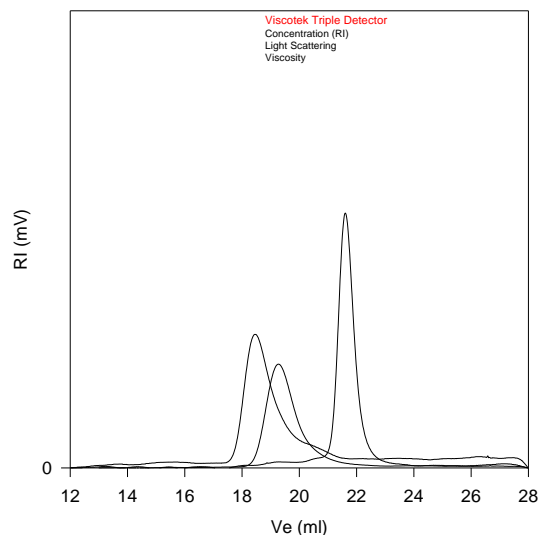
Concentration (mg/mL)	2.5380
Sample dn/dc (mL/g)	0.1096
Method File	PS80K-Nov-2012-0001.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn (Da)	Mw (Da)	Mp (Da)	Mw/Mn	IV (dL/g)
P11149_2012-11-30_17:09:11_01.vdt	458,314	541,386	572,528	1.181	1.4782



P11149-StBuMAS Precursor for SMMAS

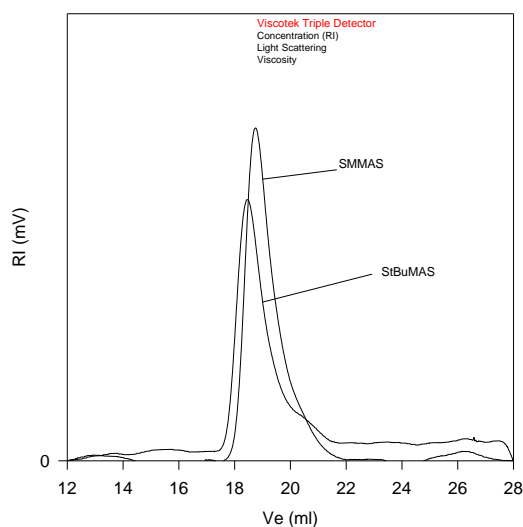


Size Exclusion Chromatography of Poly Styrene-b-tBuMA-Styrene

— PS block $M_n = 82,000$, $M_w = 88,500$, $M_w/M_n = 1.08$
 PS-b-tBuMA: M_n : 82,000-b-149,000 PI: 1.20
 After Linking reaction:
 PS-b-tBuMA-b-PS M_n 80,000-b-298,000-b-80,000 M_w/M_n 1.2
 After Conversion tBuMA to MMA
 MN 80,000-b-213,000-b-80,000

After Converting PS-b-tBuMA-S Triblock copolymer to
 PS-b-MMA-PS Triblock copolymer

P11149-StBuMAS Precursor for SMMAS



Size Exclusion Chromatography of Poly Styrene-b-MMA-Styrene

— PS block $M_n = 82,000$, $M_w = 88,500$, $M_w/M_n = 1.08$
 PS-b-tBuMA: M_n : 82,000-b-149,000 PI: 1.20
 After Linking reaction:
 PS-b-tBuMA-b-PS M_n 80,000-b-298,000-b-80,000 M_w/M_n 1.2
 After Conversion tBuMA to MMA
 MN 80,000-b-213,000-b-80,000

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.