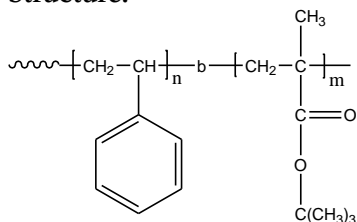


Sample Name: Poly(styrene-b-t-butyl methacrylate)

Sample #: P11221-StBuMA

Structure:



Composition:

Mn x 10 ³ S-b-tBuMA	Mw/Mn (PDI)
110.0-b-216.0	1.18

Glass transition temperature at a glance

T _g for PS block	
T _g for tBuMA block	

Synthesis Procedure:

Poly(styrene-b-t-butyl methacrylate) is prepared by anionic polymerization with sequence addition of styrene followed by t-butyl methacrylate.

Characterization:

An aliquot of the polystyrene block was terminated before addition of t-butyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the styrene protons at 6.3-7.2 ppm with the peak area of t-butyl methacrylate protons at 1.43 ppm. Block copolymer PDI is determined by SEC.

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).

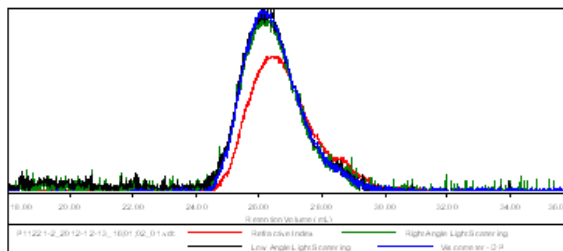
Solubility:

Poly(styrene-b-t-butyl methacrylate) is soluble in THF, dioxane, CHCl₃.

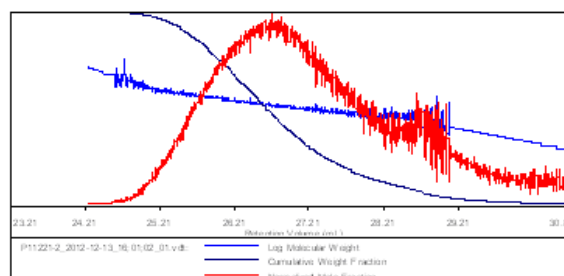
SEC profile of the block copolymer

Sample ID: P11221-2-StBuMA

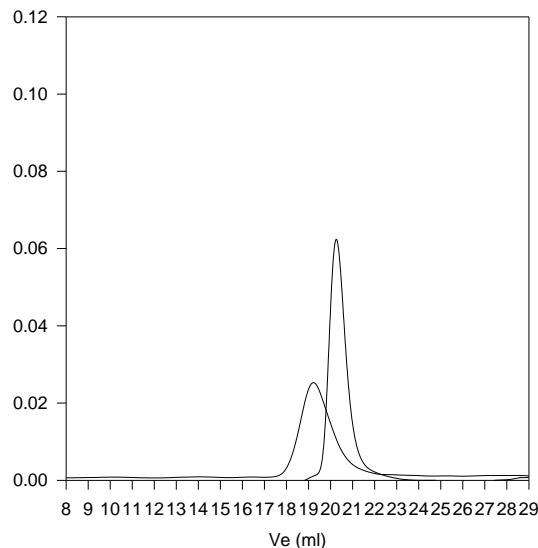
Concentration (mg/mL)	0.9580
Sample dn/dc (mL/g)	0.0910
Method File	PS80K-Dec-2012-0000.v cm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn (Da)	Mw (Da)	Mp (Da)	Mw/Mn	IV (dL/g)
P11221-2_2012-12-13_16:01:02_01.v dl	326,679	376,725	437,642	1.153	0.8755



P11221-StBuMA



Size exclusion chromatography of polystyrene-b-poly(t-butyl methacrylate)

— Polystyrene, M_n=110,000, M_w=115,000, PI=1.05

— Block Copolymer PS(110,000)-b-PtBuMA(216,000), PI=1.18