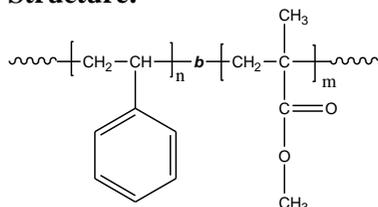


Sample Name: Poly(styrene-b-methyl methacrylate)
(polymethylmethacrylate rich in syndiotactic contents > 78%)

Sample #: P9915P-SMMA

Structure:



Composition:

| | |
|---------------------------------|------|
| Mn x 10 ³ S-b-MMA | PDI |
| 251.0-b-614.5 | 1.06 |

| | |
|-------------------------------------|--|
| T _g for PS block: 107 °C | T _g for PMMA block: 131 °C |
| Syndio:Hetero:Iso | 82:18:0 |

Synthesis Procedure:

Poly(styrene-b-methyl methacrylate) is prepared by living anionic polymerization in THF at -78 °C using sec.BuLi initiator in the presence of LiCl. Polystyrene macroanions were end capped with a unit of diphenyl ethylene (DPE) before adding methylmethacrylate (MMA) monomer. For further details please see our published articles.1-5

Characterization:

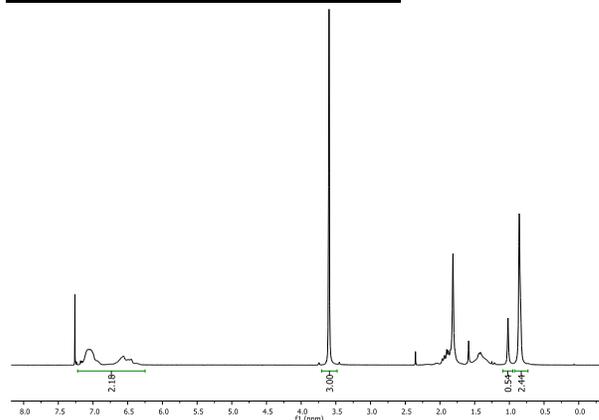
The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the poly(methyl methacrylate) protons (eg. -OCH₃ at 3.6ppm) with the of aromatic protons of polystyrene at 6.3-7.2 ppm. The molecular weight and polydispersity of copolymer are determined by SEC.

Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T_g) of the sample has been considered.

Solubility:

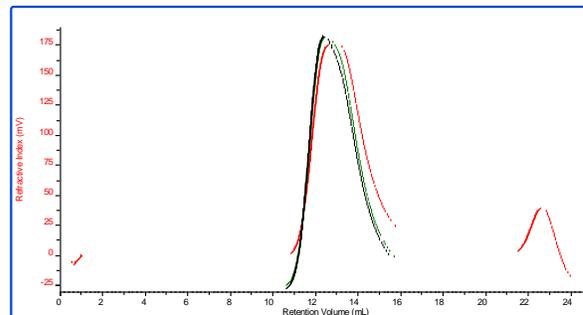
Poly(styrene-b-methyl methacrylate) is soluble in THF, toluene, dioxane and CHCl₃. This polymer readily precipitates from methanol, ethanol, hexanes and water.

¹H-NMR Spectrum of Polymer:



SEC elugram of the Sample:
P9915P

| | |
|-----------|---------------------------------------|
| dn/dc | 0.0940 |
| Flow Rate | 0.7000 |
| Solvent | DMF with LiBr |
| Method | PSS column-PMMA60K-Jan3-2019-0004.vcm |



| Sample | Mn | Mw | Mp | Mw/Mn |
|---------------------|---------|---------|---------|-------|
| P9915P_1_2019-06-11 | 865,629 | 916,581 | 925,864 | 1.059 |

Thermogram for the sample:

