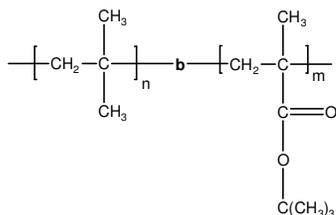


Sample Name: Poly(isobutylene-b-t-butyl methacrylate)

Sample #: P1897-IbtBuMA

Structure:

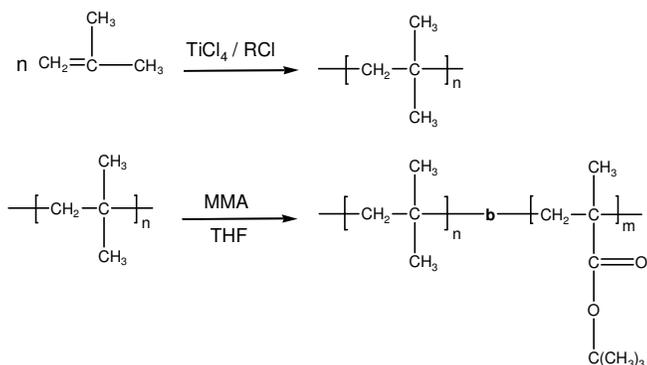


Composition:

| Mn x 10 ³ Ib-b-tBuMA | Mw/Mn (PDI) |
|------------------------------------|---------------------------------------|
| 5.2-b-36.5 | 1.14 |
| T _g for Ib block: -69°C | T _g for tBuMA block: 112°C |

Synthesis Procedure:

Poly(isobutylene-b-t-butyl methacrylate) is prepared by cationic polymerization of isobutylene followed by living anionic polymerization of t-butyl methacrylate. The reaction scheme is shown below:



Characterization:

An aliquot of the poly(isobutylene) 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 isobutylene protons with the peak area of 4-vinyl pyridine protons. Block copolymer PDI is determined by SEC.

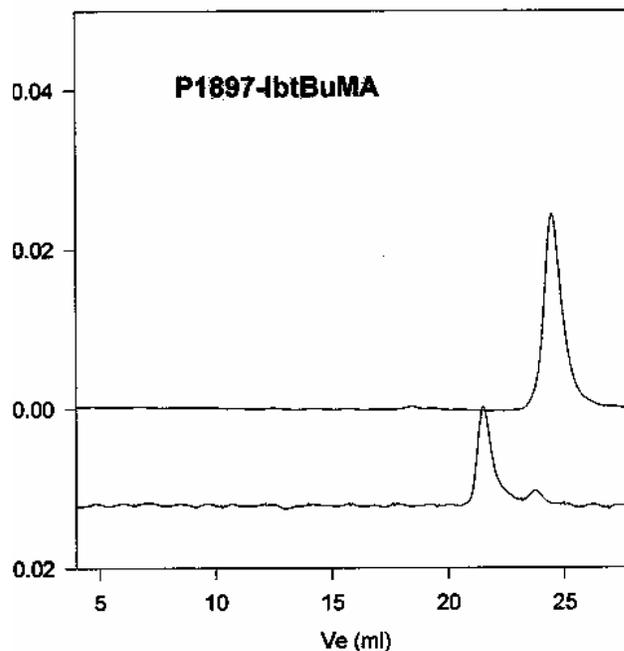
Thermal analysis:

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:

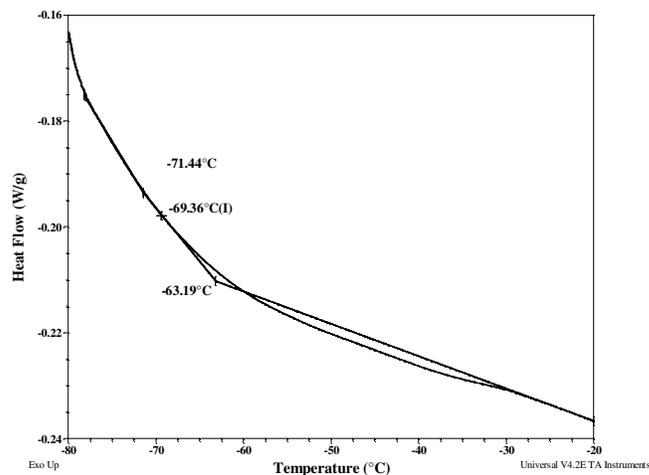
Poly(1,4-isoprene-b-4-vinyl pyridine) is soluble in THF, toluene, hexane, pentane and cyclohexane.

SEC profile of the block copolymer:



— Polyisobutylene, M_n=5200, M_w=6200, PI=1.18
 - - - Block Copolymer PIB(5200)-b-PtBuMA(36500), PI=1.

DSC thermograms for Ib block:



DSC thermograms for tBuMA block:

