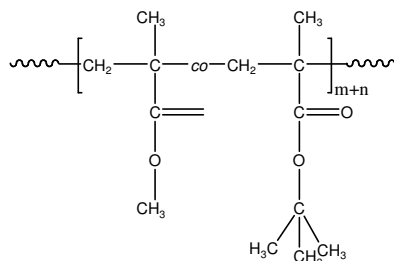


Sample Name: Random Copolymer Poly(methyl methacrylate-co-t-butyl methacrylate)

Sample #: P18776-MMAAtBuMAran

Structure:



Composition:

PMMA (88 mol%) :

| | |
|--|-------|
| Mn x 10 ³ | PDI |
| PMMA-co-PtBuMA | |
| 20.5 | 1.38 |
| T _g for the random copolymer: | 111°C |

Synthesis Procedure:

Random Copolymer Poly(methyl methacrylate and tert. Butyl methacrylate) is prepared by either anionic or group transfer or radical polymerization of methyl methacrylate and t-butyl methacrylate.

Characterization:

The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area the aromatic protons with the protons of methyl methacrylate that deducts the contribution of the styrene back bone protons.

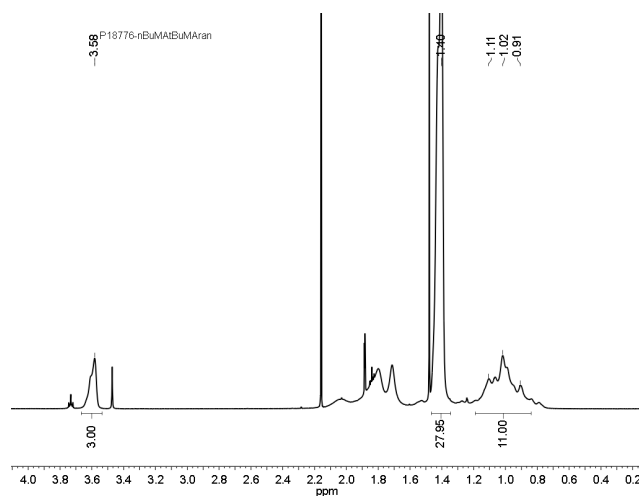
Thermal analysis:

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:

The polymer is soluble in CHCl₃, THF, DMF, toluene and precipitated out from methanol and water.

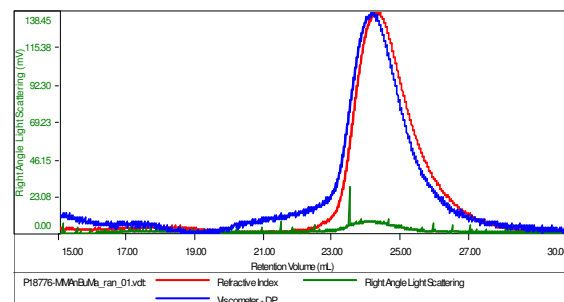
¹H-NMR Spectrum of the random copolymer:



SEC of the random copolymer:

Sample ID: P18776-tBuMAMMAran

| | |
|-----------------------|---------------------------|
| Concentration (mg/mL) | 0.6258 |
| Sample ch/d: (mL/g) | 0.0840 |
| Method File | PS80KJuly11-2014-0000.vcm |
| Column Set | 3x PL 1113-6300 |
| Solvent | THF |



| Sample | Mh | Mw | Mp | Mw/Mh | IV |
|-----------------------------|--------|--------|--------|-------|--------|
| P18776-MMAAtBuMA_ran_01.vcl | 20,715 | 28,507 | 29,583 | 1.376 | 1.1477 |

Thermogram for the sample:

Sample: P18776-MMAAtBuMAran
Size: 8.8000 mg

DSC

File: P18776-MMAAtBuMAran.001

