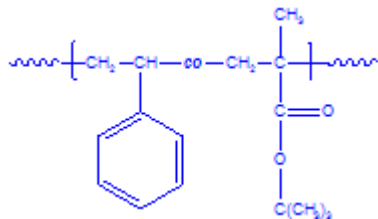


Sample Name:

**Random Copolymer Poly(styrene-co-t-butyl methacrylate)**

Sample #: **P2113A-StBuMAran**

**Structure:**

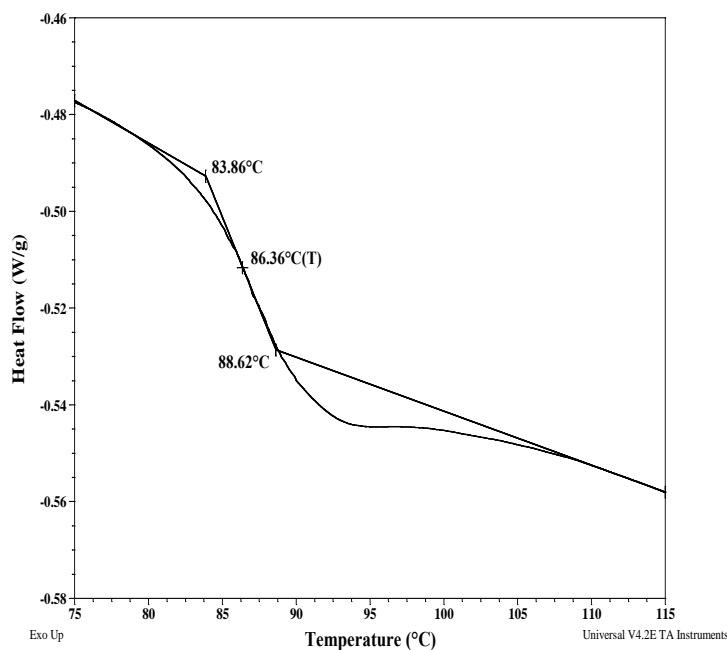


**Composition:**

PS (mol%) : 50

Mn x 10 <sup>3</sup> PS-co-PtBuMA	PDI
28.1	1.28
T <sub>g</sub> for the random polymer	86°C

**Thermogram for the sample:**



### Synthesis Procedure:

Random Copolymer poly(styrene-co-t-butyl methacrylate) is prepared by radical polymerization of styrene 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 <sup>1</sup>H-NMR spectroscopy by comparing the peak area the aromatic protons of styrene at about 6.66-7.05 ppm with the protons of t-butyl acrylate at about 0.8-2.5 ppm that deducts the contribution of the styrene back bone protons.

### Thermal analysis:

Thermal analysis of the samples was carried out on a TA 100 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<sub>g</sub>).

### Solubility:

Random Copolymer poly(styrene-co-t-butyl acrylate) is soluble in CHCl<sub>3</sub>, THF, DMF, toluene and precipitated out from methanol and water.