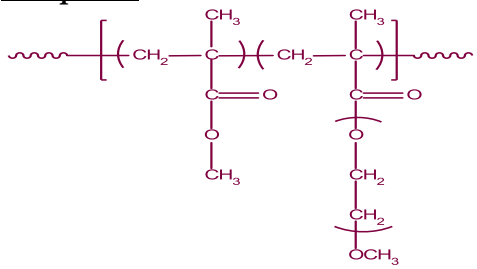
Sample Name:
Poly(methyl methacrylate-co-PEO methacrylate), comb-like copolymer
Sample #: P6536-MMAEOMAran



Composition:

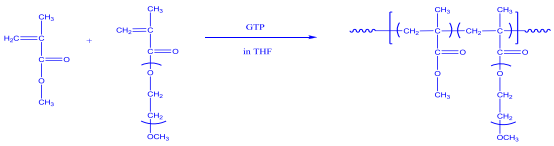
Mn x 10^3 Total	PDI
12.5	1.10
With 80 wt% of MMA	20 wt% of EOMA (MW of EOMA=300)

One chain of polymer consists of 100 units of MMA & 8 units of PEO methacrylate.

The intrinsic viscosity of the polymer was 0.112 dl/g in THF at 30°C. The R_g was found to be 3.8 nm.

Synthesis Procedure:

The polymer was prepared by group-tranfer polymerization of MMA and PEO with methacrylate terminated marcromonomer. The reactions scheme is shown below:



Characterization:

The molecular weight and polydispersity index (PDI) were analyzed by size exclusion chromatography. The absolute molecular weight was calculated from the results of light scattering. The composition of the polymer was calculated from NMR.

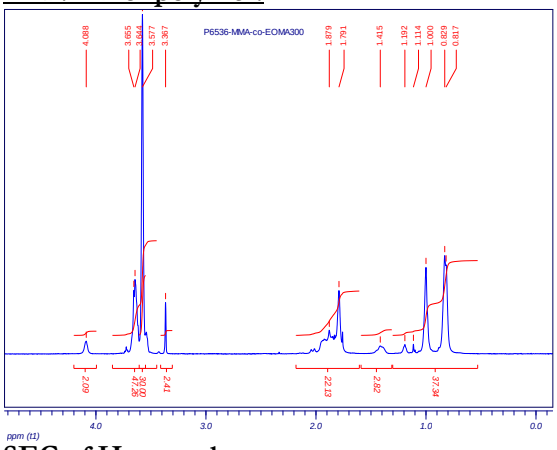
Thermal analysis of the sample

Thermal analysis was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The **glass transition temperature (T_g) of the polymer is 80°C**.

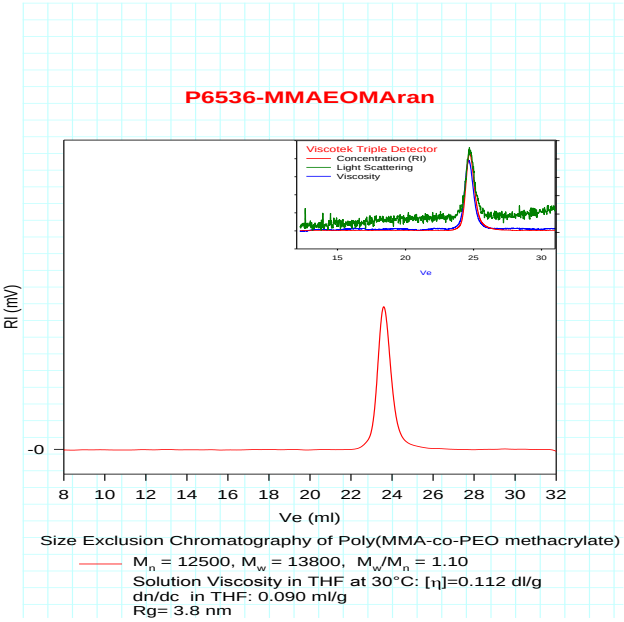
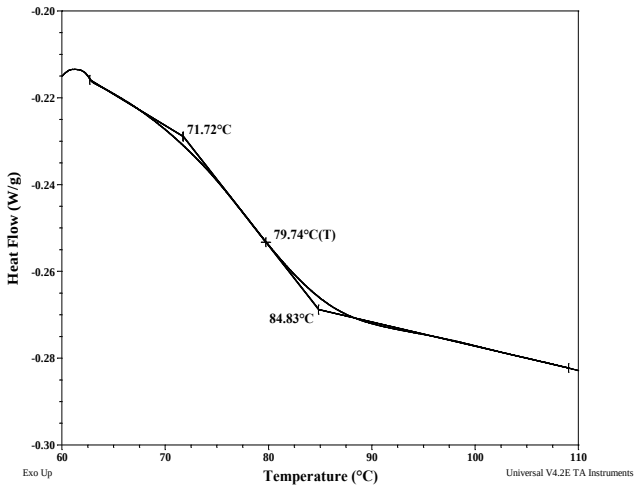
Solubility:

The polymer is soluble in THF, $CHCl_3$, acetone and precipitates from hexane and ether depend on the composition

H¹ NMR of polymer:



SEC of Homopolymer:



DSC thermogram for the renadom polymer: