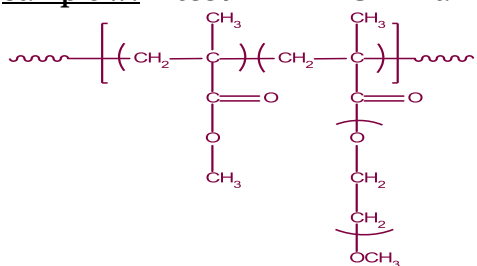


**Poly(methyl methacrylate-co-PEO methacrylate), comb-like copolymer**  
**Sample #: P6537-MMAEOMAran**



### Composition:

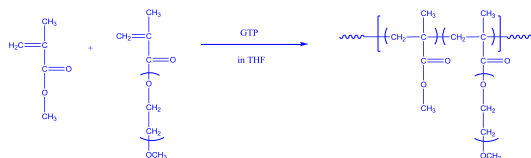
Mn x 10 <sup>3</sup> Total	PDI
21.5	1.13
With 74 wt% of MMA	26 wt% of EOMA (MW of EOMA=300)

One chain of polymer consists of 159 units of MMA & 19 units of PEO methacrylate.

The intrinsic viscosity of the polymer was 0.137 dl/g in THF at 30°C. The  $R_g$  was found to be 4.9 nm.

### Synthesis Procedure:

The polymer was prepared by group-transfer polymerization of MMA and PEO with methacrylate terminated macromonomer. 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.

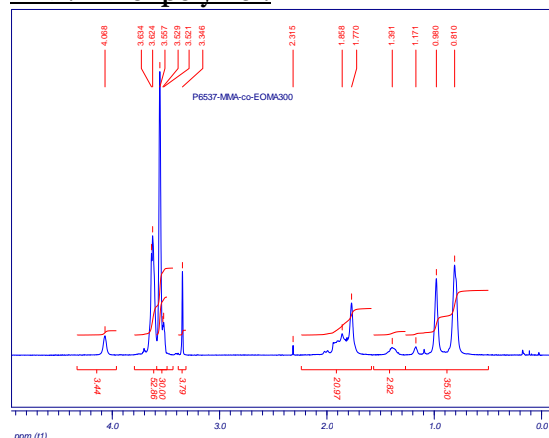
## Thermal analysis

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 was found to be 53°C.

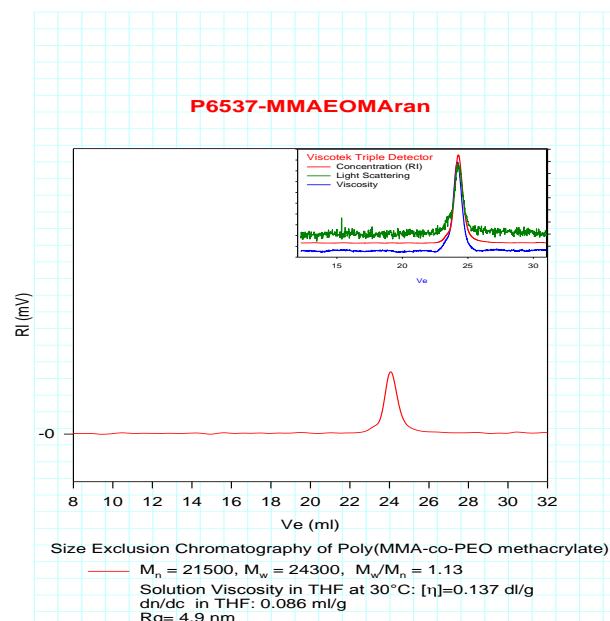
**Solubility:**

The polymer is soluble in THF,  $\text{CHCl}_3$ , acetone and precipitates from hexane and ether depend on the composition.

**H<sup>1</sup> NMR of polymer:**



**SEC of Homopolymer:**



**DSC thermogram for the random polymer:**

