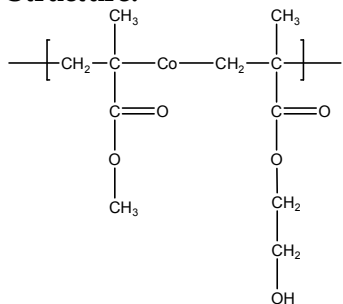


**Sample Name:**

Random Copolymer Poly(methyl methacrylate-co-hydroxyethyl methacrylate)

**Sample #:** P10473-MMAHEMAran

**Structure:****Composition:**

PMMA: 65 mole% : HEMA: 35%

$M_n \times 10^3$ MMA-co-HEMA	PDI
145.0	1.18
$T_g$ for the random copolymer	121 °C

**Synthesis Procedure:**

Random Copolymer is prepared by living anionic polymerization of MMA and trimethyl siloxy ethyl methacrylate followed by deprotection of OH of HEMA monomer.

**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  $^1\text{H-NMR}$  spectroscopy by comparing the peak area the methyl ester at 3.6ppm m with the protons of methyl methacrylate at about 0.8-1.2 ppm that deducts the contribution of the methyl protons of the HEMA moiety.

**Thermal analysis:**

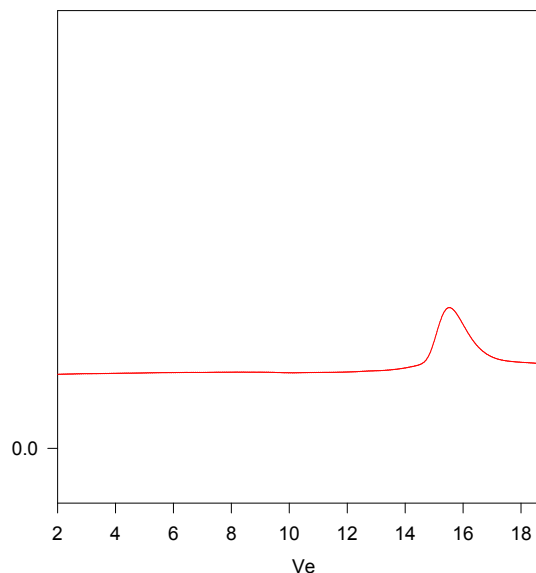
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature ( $T_g$ ).

**Solubility:**

Random Copolymer Poly(MMA-co-HEMA) is soluble in , THF, DMF.

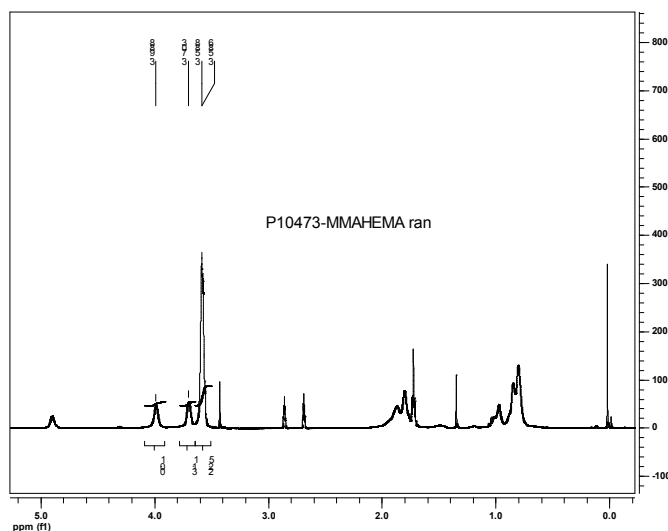
**SEC of the random copolymer:**

**P10473-MMAHEMAran**



Size Exclusion Chromatography of Poly(MMA-co-HEMA) run in DMF at 60°C

$M_n = 145,000$ ,  $M_w = 171,000$ ,  $M_w/M_n = 1.18$

**Proton NMR of copolymer:****DSC thermogram for the sample:**