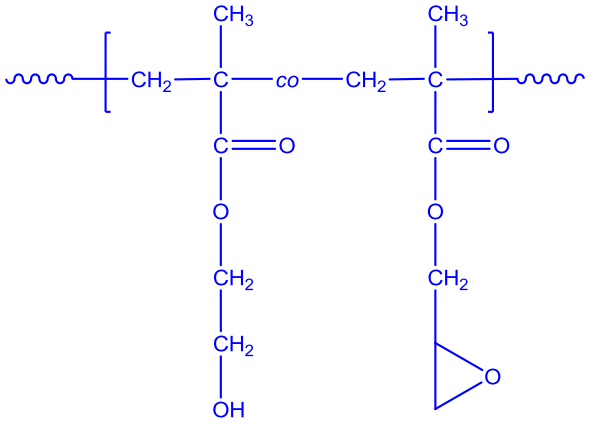
**Sample Name:**
**Random Copolymer Poly(hydroxyethyl methacrylate-co-glycidyl methacrylate)**

**Sample #: P6806-HEMAGMAran**

**Structure:**




**Composition:**

| | |
|---|---|
| Mn x $10^3$ HEMA-co-GMA | 12.2 |
| Mw/Mn | 1.42 |
| Chemical Composition (wt%) | 44.6 (GMA) |

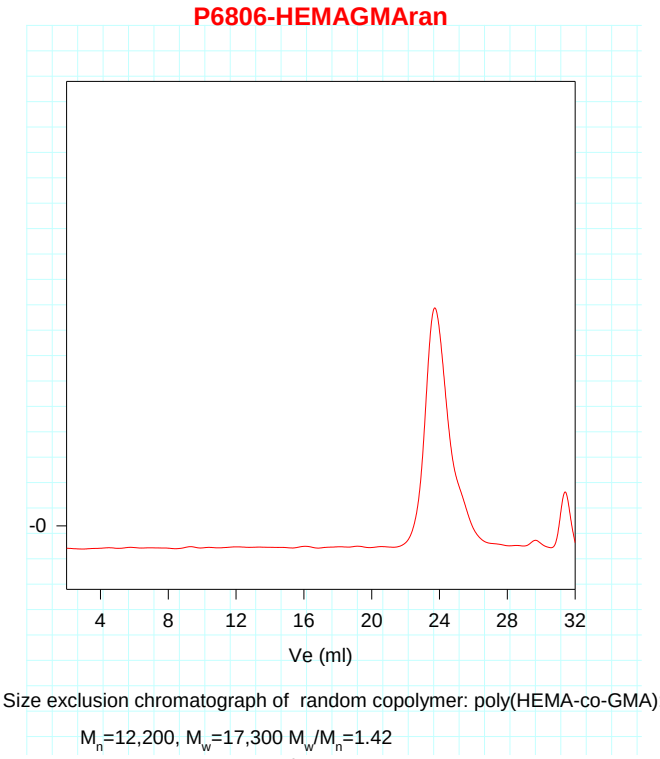
**Synthesis Procedure:**
Random copolymer is prepared by GTP polymerization of GMA and trimethyl siloxy ethyl methacrylate, following hydrolysis by acid to recover the free hydroxyl in HEMA.

**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 $^1$H-NMR spectroscopy (in DMSO-d6) by comparing the peak area the glycidyl ester at 2.6-2.8ppm with the protons of hydroxyethyl at 3.90ppm .

**Thermal analysis:**
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10$^o$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 of poly(HEMA-co-GMA) is soluble in DMSO, DMF, and THF dependent on the composition.

**SEC of the random copolymer:**




Size exclusion chromatograph of random copolymer: poly(HEMA-co-GMA):
$M_n$=12,200, $M_w$=17,300 $M_w/M_n$=1.42
GMA content: 44.6 wt% by NMR

**Proton NMR of copolymer:**