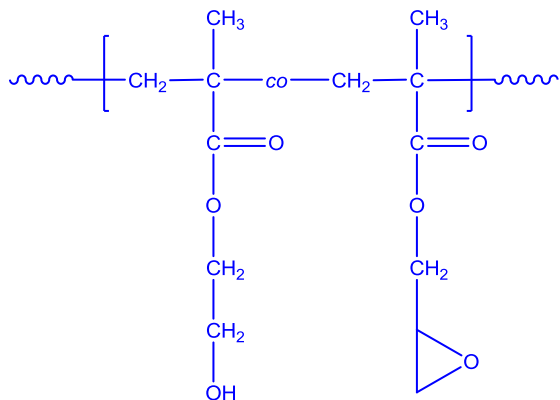


Sample Name:

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

Sample #: P6801-HEMAGMAran

Structure:



Composition:

Mn x 10 ³ HEMA-co-GMA	83.6
Mw/Mn	2.13
Chemical Composition (wt%)	62.0 (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 ^1H -NMR spectroscopy (in DMSO- d_6) by comparing the peak area the glycidyl ester at 2.6-2.8ppm with the protons of hydroxyethyl at 3.90ppm .

Thermal analysis:

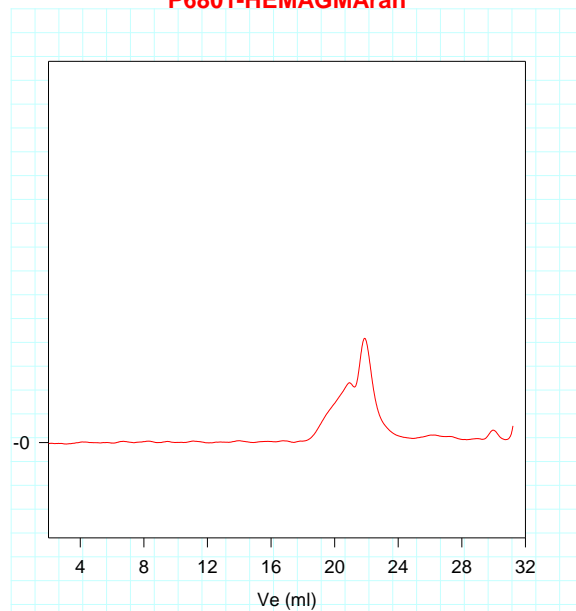
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:

Random copolymer of poly(HEMA-co-GMA) is soluble in DMSO, DMF, and THF dependent on the composition.

SEC of the random copolymer:

P6801-HEMAGMAran



Size exclusion chromatograph of random copolymer: poly(HEMA-co-GMA):

$$M_n=83,600, M_w=178,000 \quad M_w/M_n=2.13$$

GMA content: 62 wt% by NMR

Proton NMR of copolymer:

