

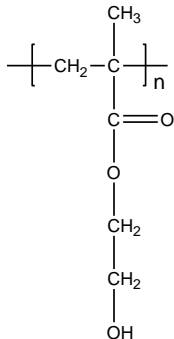
Sample Name:

Poly (2-hydroxyethyl methacrylate)

Sample #: **P6620-HEMA**

(Synthesized by GTP)

Structure:



Composition:

$M_n \times 10^3$	PDI
17.0	1.15
T_g ($^{\circ}\text{C}$)	106
Microstructure S: H: I	55:40:5

Synthesis Procedure:

Poly (2-hydroxyethyl methacrylate) is synthesized by living polymerization (anionic or by GTP process) of 2-(trimethylsilyl) ethyl methacrylate followed by deprotection of hydroxyl group under acidic conditions.

Characterization:

The molecular weight and polydispersity index (PDI) of Poly (2-hydroxyethyl methacrylate) are obtained by size exclusion chromatography.

Thermal analysis

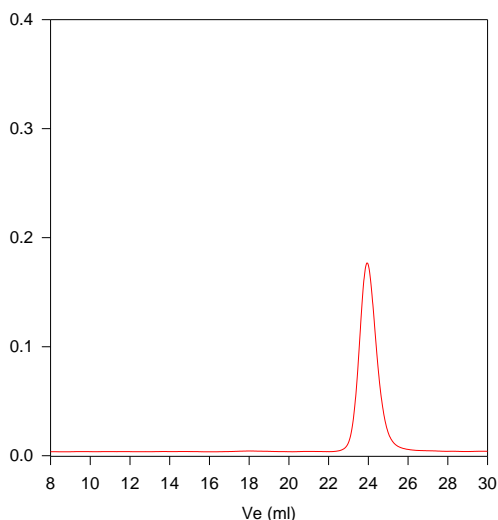
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of $10^{\circ}\text{C}/\text{min}$. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:

Poly (2-hydroxyethyl methacrylate) is soluble in ethanol, DMF etc; and it is insoluble in hexane, toluene, THF, and water.

SEC of homopolymer:

P6620-HEMA



Size exclusion chromatograph of Poly(2-hydroxyethyl methacrylate):

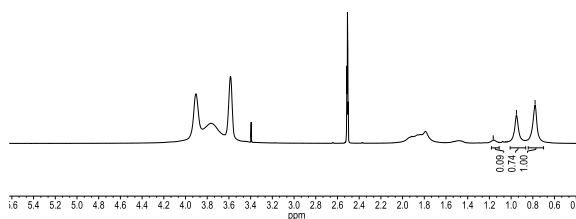
$M_n=27,000$, $M_w=31,000$, $PI=1.15$

After deprotecting OH group:

M_n : 17,000, M_w/M_n 1.15

1.16
0.95
0.76

P6620-HEMA run in DMSO



DSC thermogram for the polymer:

