

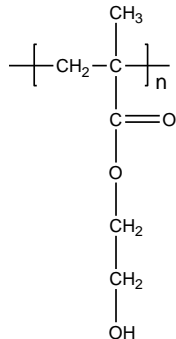
Sample Name:

Poly (2-hydroxyethyl methacrylate)

Sample #: **P6622-HEMA**

(Synthesized by GTP)

Structure:



Composition:

$M_n \times 10^3$	PDI
45.0	1.5
T_g (°C)	107
Microstructure S: H: I	57:35:8

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.

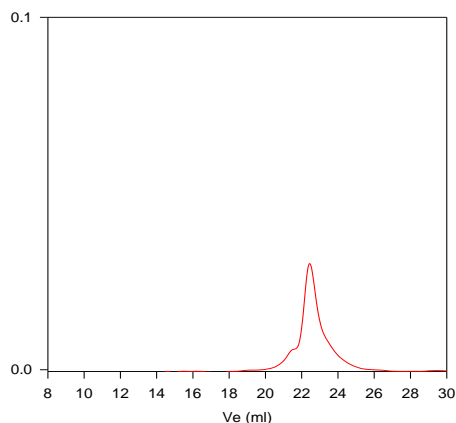
Thermal analysis

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°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).

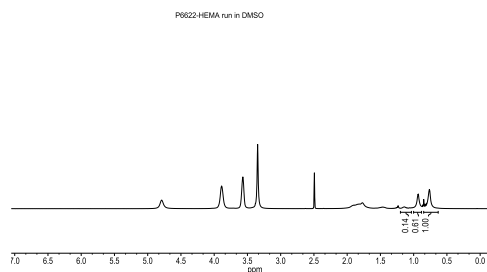
Solubility: Poly (2-hydroxyethyl methacrylate) is soluble in ethanol, DMF etc. But it is insoluble in hexane, toluene, THF, and water.

SEC of Homopolymer:

P6622-HEMA



Size exclusion chromatograph of Poly(2-trimethyl siloxylethylmethacrylate):
 $M_n=70,500$, $M_w=108,000$, $PI=1.5$
After deprotecting OH group:
 $M_n=45,000$, M_w/M_n 1.5



DSC thermogram for the homopolymer:

