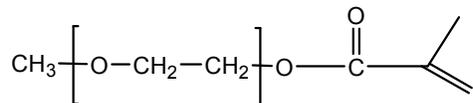


**Sample Name: Methacrylate Terminated Poly(ethylene glycol)**

**Sample #: P3508-EGMA**

**Structure:**

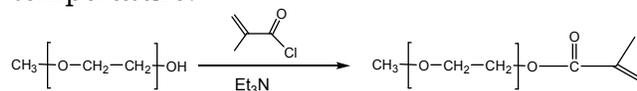


**Composition:**

| Mn x 10 <sup>3</sup> | PDI  |
|----------------------|------|
| 1.0                  | 1.07 |

**Synthesis Procedure:**

Methacrylate terminated Poly(ethylene glycol) was prepared by reacting polyethylene glycol methyl ether with methacryloyl chloride in the presence of triethyl amine. The reaction can be carried out in THF or in CH<sub>2</sub>Cl<sub>2</sub> at room temperature.



**Characterization:**

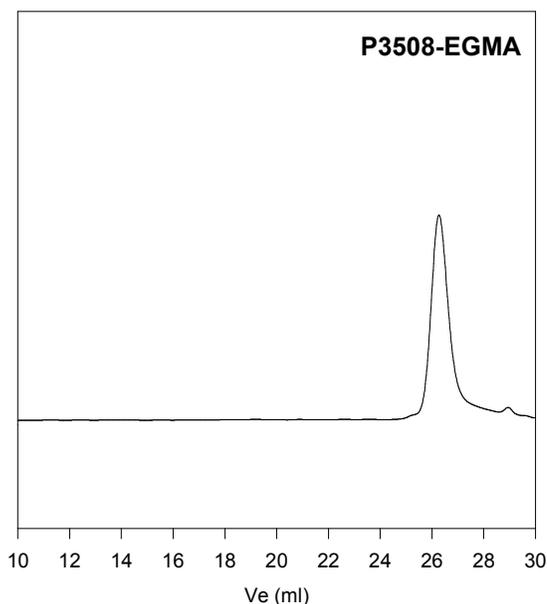
The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. Polymer functionality verified by <sup>1</sup>H-NMR spectroscopy or FT-IR.

**Functionality:** Functionality of the polymer was determined by <sup>1</sup>H NMR analysis.

**Solubility:**

Polymer is soluble in water, methanol and ethanol, THF, CHCl<sub>3</sub>. It is precipitated out from cold ethanol, isopropanol, hexane and ether.

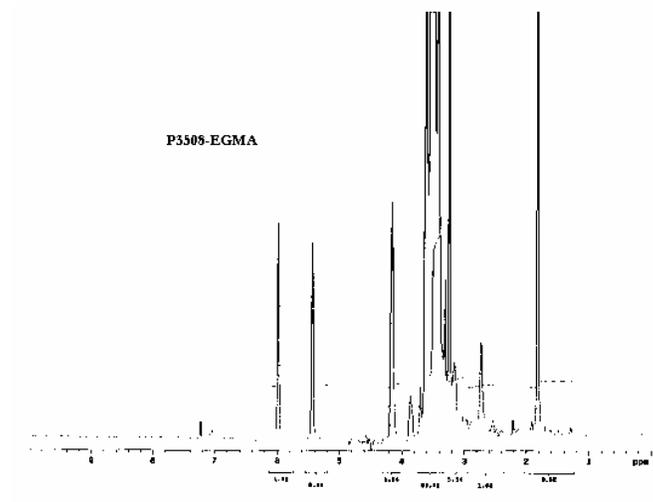
**SEC of Sample:**



Size exclusion chromatograph of methacrylate terminated poly(ethylene glycol):

M<sub>n</sub>=1000, M<sub>w</sub>=1070, PI=1.07

**<sup>1</sup>H NMR for the polymer:**



**Thermal analysis of the sample# P3508-EGMA**

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 ( $T_g$ ).

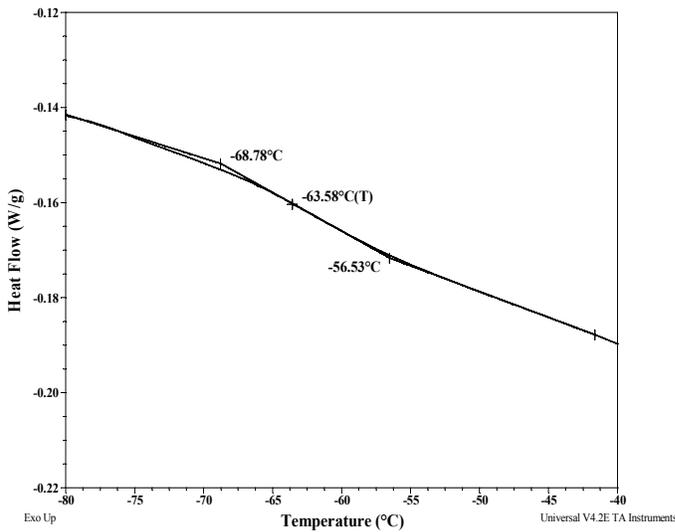
**Melting and crystallization curve for the sample**

The melting temperature ( $T_m$ ) was taken as the maximum of the endothermic peak where as the crystallization temperature ( $T_c$ ) was considered as the minimum of the exothermic peak.

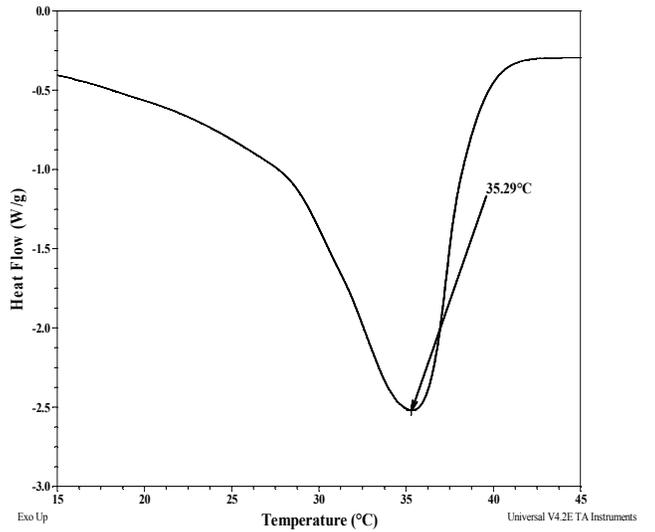
**Thermal analysis results at a glance**

| Sample | $T_m$ (°C) | $T_c$ (°C) | $T_g$ (°C) |
|--------|------------|------------|------------|
| EGMA   | 35         | 26         | -64        |

**Thermogram for the sample**



**Melting curve for the sample:**



**Crystallization curve for the sample:**

