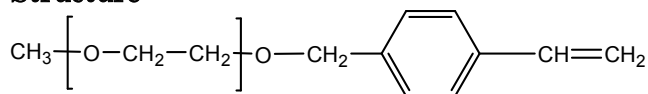


Sample Name: Styrene Terminated  
Poly(ethylene glycol)

Sample #: Styreomer-2K (Lot# P462)

Structure:

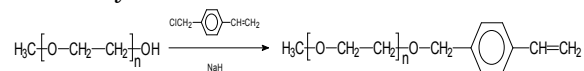


Composition:

$M_n \times 10^3$	PDI
2.0	1.07

### Synthesis Procedure:

Polyethylene glycol monomethyl ether was prepared by anionic living polymerization of ethylene oxide using potassium salt of 2 methoxyl 1-propanol as initiator. Styrene terminated PEG was obtained via etherification with 4-chloromethyl styrene. The scheme of the reaction is illustrated below. The obtained polymer is called "Styreomer".

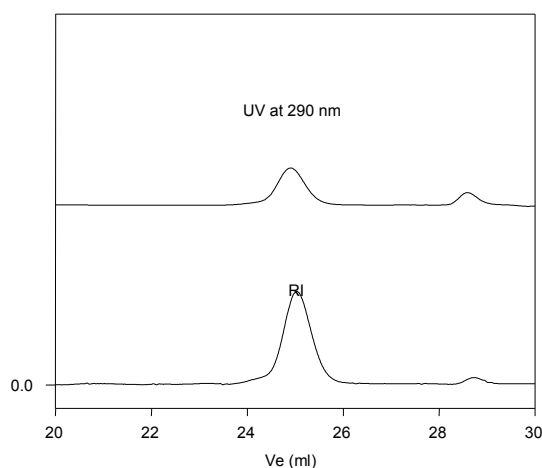


### Characterization:

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  $^1\text{H}$ -NMR spectroscopy or FT-IR.

### SEC of Sample:

Styreomer-2K (P462)



Size exclusion chromatography of poly(ethylene glycol) methyl ether styrene with ultraviolet (UV) and refractive index (RI) detectors  
 $M_n=2100$ ,  $M_w=2250$ ,  $M_z=2400$ ,  $PI=1.07$

### Thermal analysis of the sample

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 ( $T_g$ ).

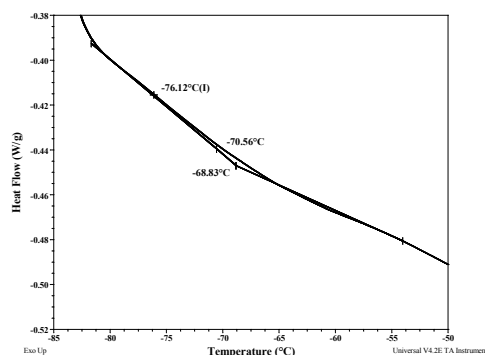
### Melting and crystallization curve for the sample

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.

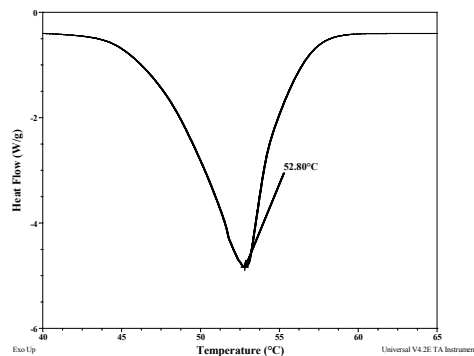
### Thermal analysis results at a glance

$T_m$ ( $^\circ\text{C}$ )	$T_c$ ( $^\circ\text{C}$ )	$T_g$ ( $^\circ\text{C}$ )
53	33	-71

### Thermogram of EO



### Melting curve for EO



### Crystallization curve for the sample:

