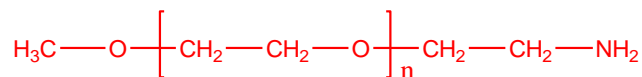


**Sample Name:**

**Amino terminated Poly(ethylene glycol methyl ether**

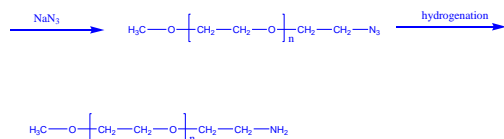
**Sample #: P6328-EGOCH3NH2**

**Structure:****Composition:**

$\text{Mn} \times 10^3$	PDI ( $\text{Mw}/\text{Mn}$ )
0.8	1.10

**Synthesis Procedure:**

Hydroxy Terminated Poly(ethylene glycol) was prepared by anionic living polymerization of ethylene oxide using methanolate potassium salt as initiator. The obtained polymer was converted to amino terminated PEG in several steps. The scheme of the reaction is illustrated below:

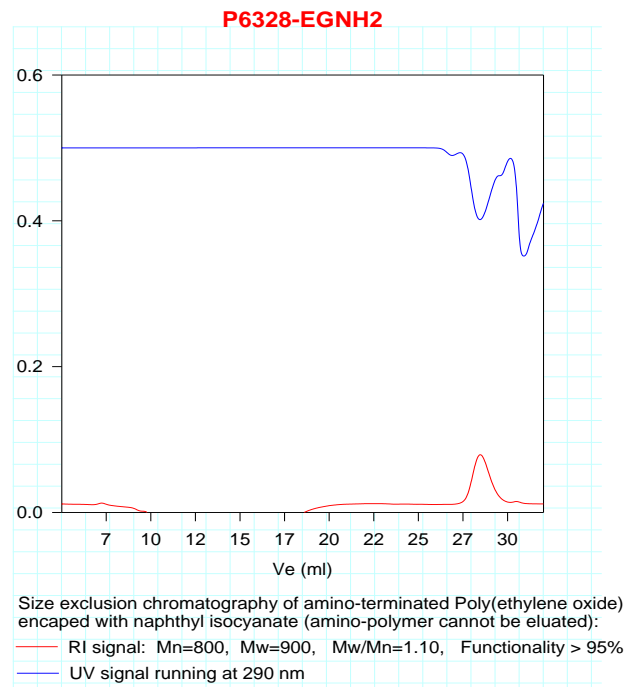
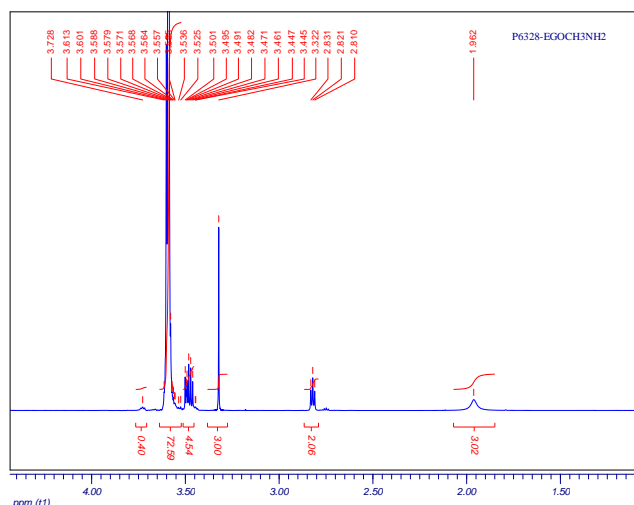
**Characterization:**

By Size exclusion chromatography (SEC): Varian liquid chromatograph equipped with UV and refractive detector. SEC columns from Supelco were used with THF containing 1 vol%  $(\text{Et})_3\text{N}$  as the eluent. The molecular weights were determined using light scattering detector and viscosity detector. The molecular weights and the polydispersity indice were calculated.

An aqueous GPC column from Supelco(G5000 PWXL) was also used with 0.5 M acetic acid and 0.8 M  $\text{NaNO}_3$  as the eluent. It was kept at a constant temperature of  $50^\circ\text{C}$ . The flow rate was 1.0 ml/min. The column was calibrated with monodisperse poly(ethylene oxide) standards. The molecular weights and the polydispersity index of polyethylene oxide were calculated by using a Visual Basic GPC software. The amino terminated polymer cannot be eluted from THF columns. End capping amino with naphthyl isocyanate is necessary, which also activates the UV absorption to determine the functionality.

**Solubility:**

Polymer is soluble in water, methanol and ethanol, THF,  $\text{CHCl}_3$ . It is precipitated out from hexane and ether.

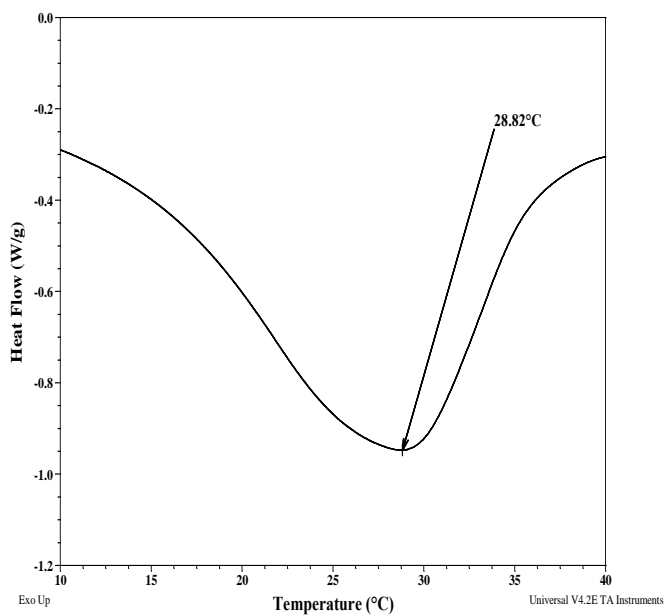
**SEC of Sample:****NMR of Sample:****Thermal analysis of the P6328-EGOCH3NH2**

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of  $20^\circ\text{C}/\text{min}$ . 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.

**Melting curve for the polymer:**



**Thermal analysis results at a glance**

Sample	T <sub>m</sub> (°C)	T <sub>c</sub> (°C)	T <sub>g</sub> (°C)
EGOCH <sub>3</sub> NH <sub>2</sub>	29	19	Not distinct

**Crystallization curve for the polymer:**

