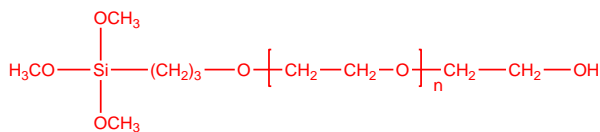


Sample Name:
Trimethoxysilyl terminated Polyethylene glycol
Sample #: P6275-EGTMS

Structure:

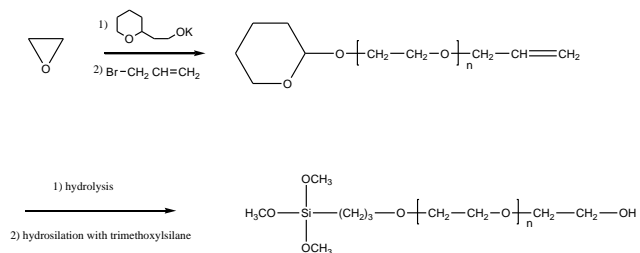


Composition:

Mn x 10 ³	PDI (Mw/Mn)
1,05 (24 units)	1.10

Synthesis Procedure:

Allyl Terminated Poly(ethylene glycol) was prepared by anionic living polymerization of ethylene oxide using a hydroxyl protected alcohol potassium salt as initiator. The obtained polymer was hydrosilylated in the presence of platinum catalyst. 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% (Et)₃N as the eluent. The molecular weights were determined using light scattering detector and viscosity detector. The molecular weights and the polydispersity indice were calculated.

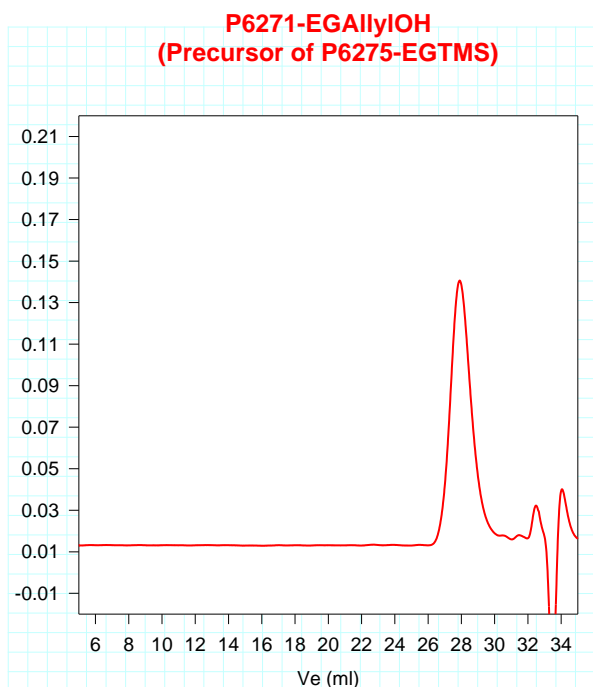
An aqueous GPC column from Supelco(G5000 PWXL) was also used with 0.5 M acetic acid and 0.8 M NaNO₃ as the eluent. It was kept at a constant temperature of 50°C. The flow rate was 1.0 ml/min. The column was calibrated with monodisperse poly(ethylene oxide) standards. The molecular weights and the polydispersity index of polyethylene oxide were calculated by using a Visual Basic GPC software.

Functionality: Functionality of the polymer was determined by H NMR analysis or FT-IR spectroscopy.

Solubility:

Polymer is soluble in water(reacted), methanol(reacted) and ethanol(reacted), THF, CHCl₃, Acetone. It is precipitated out from cold hexane and ether.

SEC of Sample:



Size exclusion chromatography of α-Allyl-ω-hydroxy poly(ethylene glycol):

— Allyl terminated Poly(ethylene oxide):
M_n=1050, M_w=1160, M_w/M_n=1.10

NMR Spectrum:

