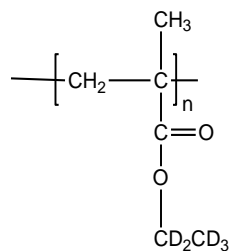


Sample Name: Poly(ethyl-d₅ methacrylate)

Sample #: P8338-d5PEMA

Structure:

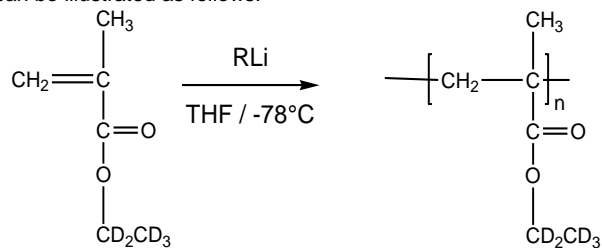


Composition:

Mn x 10 ³	PDI
14.0	1.2

Synthesis Procedure:

Deuterated poly(ethyl-d₅ methacrylate) is obtained by living anionic polymerization using sec.BuLi as initiator end capped with a unit of diphenyl ethylene or few units of α -methylstyrene. The polymerization of MMA monomer is carried out in THF at -78 °C in the presence of LiCl as additive. The polymerization scheme can be illustrated as follows:



Characterization:

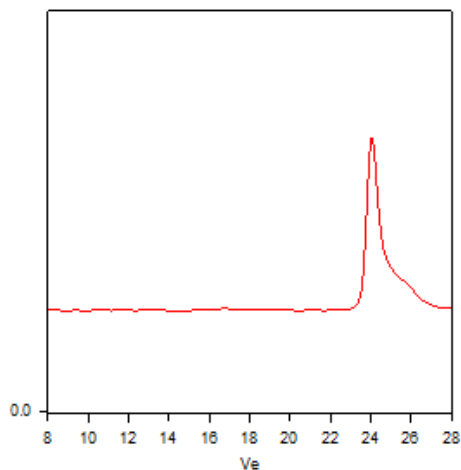
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co. ¹H NMR analysis was carried out on Varian instrument at 500MHz.

Solubility:

Deuterated poly(ethyl methacrylate)-d₅ is soluble in THF, CHCl₃, toluene and dioxane. The polymer precipitates from hexanes, methanol and ethanol.

SEC of Homopolymer:

P8338-d5PE MA



Size Exclusion Chromatography of Deuterated Poly(ethyl methacrylate)-d₅:
M_n = 14000, M_w = 16800, M_w/M_n = 1.2

¹H NMR of the Polymer:

