

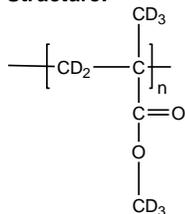
Sample Name: Poly(methyl methacrylate)-d₈

SEC of Homopolymer:

Sample #: P4039-dPMMA

P4039-dMMA

Structure:

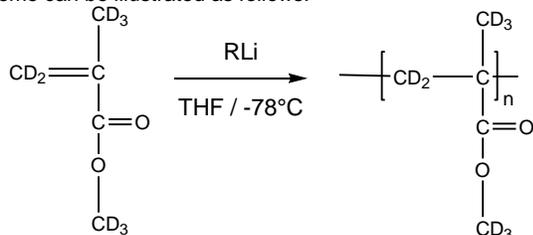


Composition:

Mn x 10 ³	PDI
23.5	1.05

Synthesis Procedure:

Deuterated poly(methyl methacrylate)-d₈ 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:

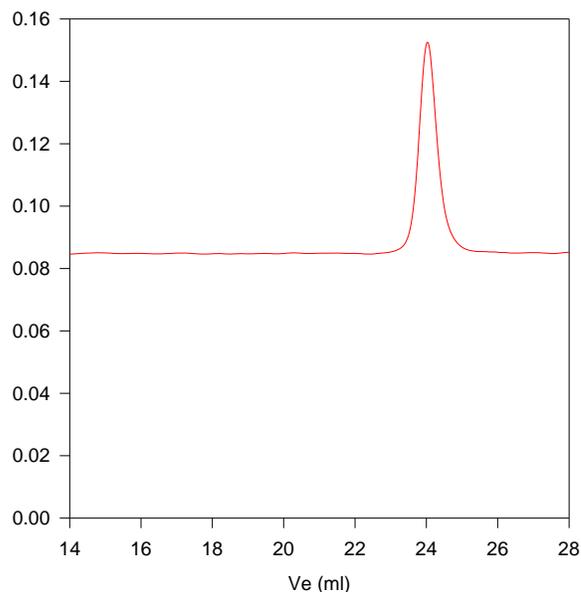


Characterization:

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(methyl methacrylate)-d₈ is soluble in THF, CHCl₃, toluene and dioxane. The polymer precipitates from hexanes, methanol and ethanol.



Size exclusion chromatograph of Poly methyl methacrylate(d₈):

M_n=23500, M_w=24700, PI=1.05

On line Viscotek triple detectors:

Solution viscosity in THF at 30 °C: 0.161dl/g

dn/dc in THF at 30 °C: 0.085ml/g