

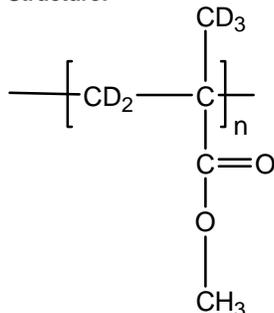
Sample Name: Deuterated Poly(methyl methacrylate)-d₅

SEC of Homopolymer:

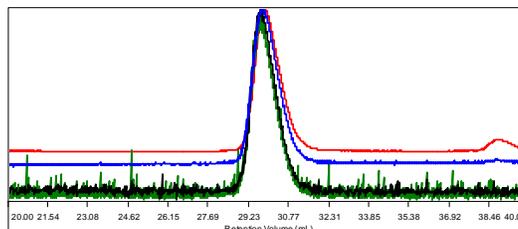
Sample #: P14054-d5PMMA

Sample ID: P14054-d5PMMA

Structure:



Concentration	3.9686
Sample dn/dc	0.0890
Method File	PS99K-0927-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



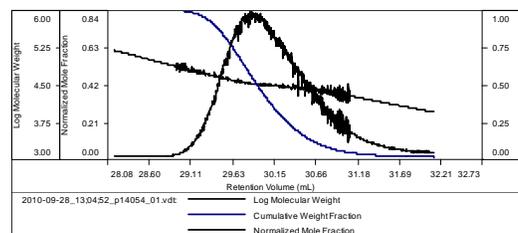
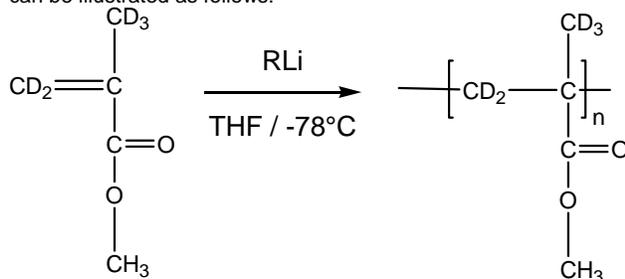
Composition:

Mn x 10 ³	PDI
30.7	1.09

Sample	Mn	Mw	Mz	Mw/Mn	IV	Rh
2010-09-28_13:04:52_p14054_01.vdt	30,698	33,435	36,677	1.089	0.1917	6.05

Synthesis Procedure:

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