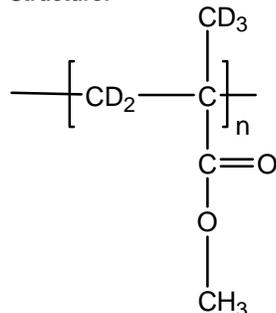


Sample Name: Deuterated Poly(methyl methacrylate)-d₅

Sample #: P14053-d5PMMA

Structure:

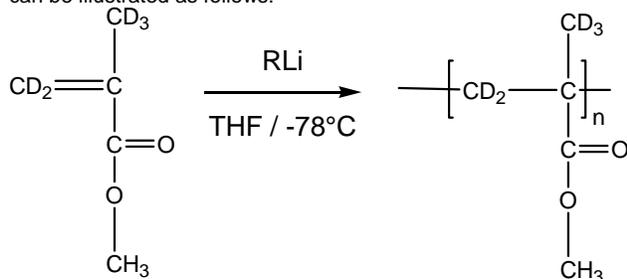


Composition:

Mn x 10 ³	PDI
23.5	1.10

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.

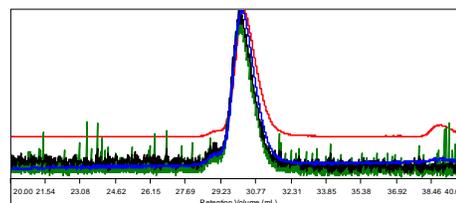
Solubility:

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

SEC of Homopolymer:

Sample ID: P14053-d5PMMA

Concentration	3.7064
Sample dn/dc	0.0890
Method File	PS99K-0927-0000.vcm
Column Set	3xPL 1113-6300
System	System 1



Sample	Mn	Mw	Mz	Mw/Mn	IV	Rh
2010-09-28_12:03:48_p14053_01.vdt	23,457	25,966	28,708	1.107	0.1631	5.28

