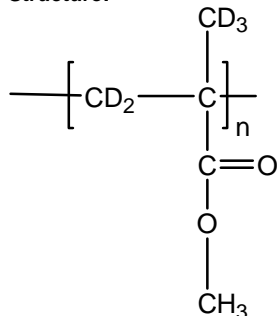


**Sample Name: Deuterated Poly(methyl methacrylate)-d<sub>5</sub>**

**Sample #: P14053-d5PMMA**

**Structure:**

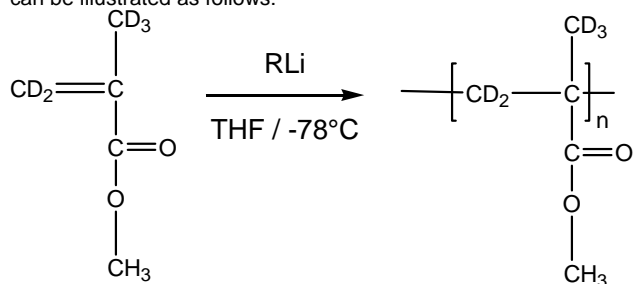


**Composition:**

Mn x 10 <sup>3</sup>	PDI
23.5	1.10

**Synthesis Procedure:**

Deuterated poly(methyl methacrylate)-d<sub>5</sub> is obtained by living anionic polymerization using sec.BuLi as initiator end capped with a unit of diphenyl ethylene or few units of  $\alpha$ -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. <sup>1</sup>H NMR analysis was carried out on Varian instrument at 500MHz.

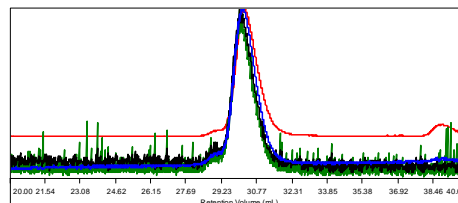
**Solubility:**

Deuterated poly(methyl methacrylate)-d<sub>5</sub> is soluble in THF, CHCl<sub>3</sub>, 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

