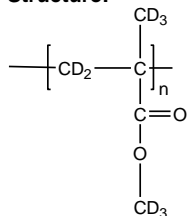


**Sample Name:** Poly(methyl methacrylate)-d<sub>8</sub>

**Sample #:** P4039-dPMMA

**Structure:**

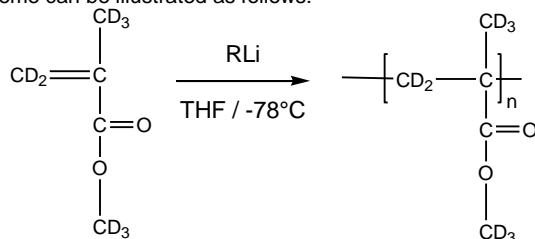


**Composition:**

Mn x 10 <sup>3</sup>	PDI
23.5	1.05

**Synthesis Procedure:**

Deuterated poly(methyl methacrylate)-d<sub>8</sub> 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:**

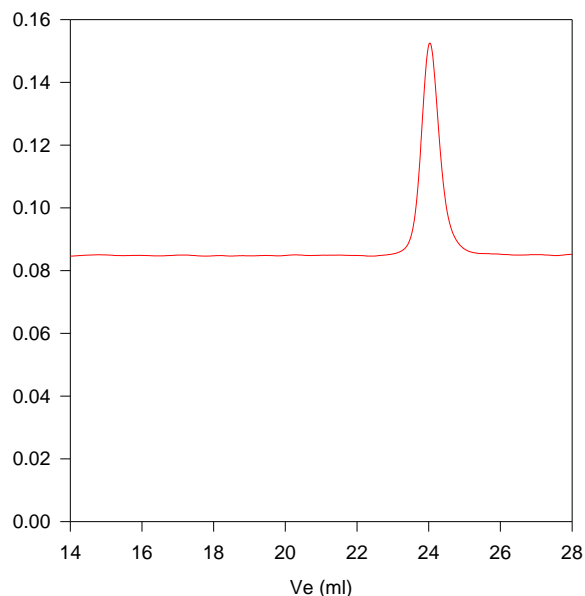
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

**Solubility:**

Deuterated poly(methyl methacrylate)-d<sub>8</sub> is soluble in THF, CHCl<sub>3</sub>, toluene and dioxane. The polymer precipitates from hexanes, methanol and ethanol.

**SEC of Homopolymer:**

**P4039-dMMA**



Size exclusion chromatograph of Poly methyl methacrylate(d<sub>8</sub>):

M<sub>n</sub>=23500, M<sub>w</sub>=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