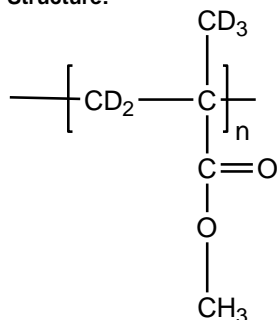


Sample Name: Deuterated Poly(methyl methacrylate)-d₅

Sample #: P18890-d5PMMA

Structure:

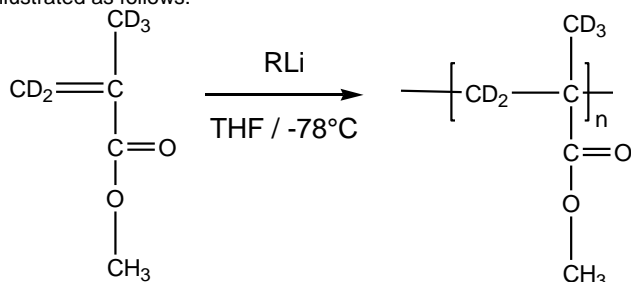


Composition:

Mn x 10 ³	PDI
3.5	1.03

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:

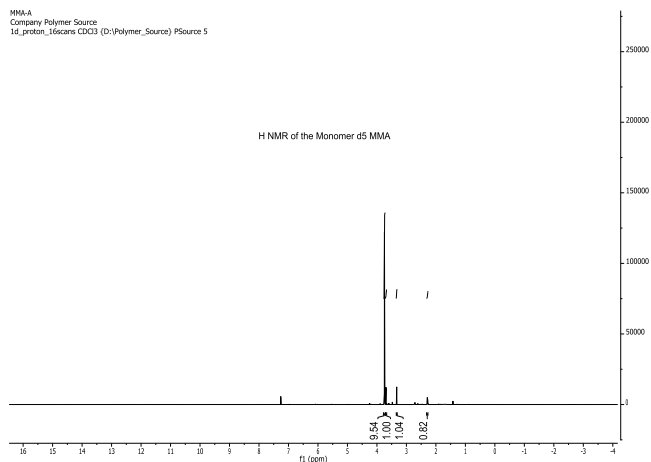
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple 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.

¹H NMR:

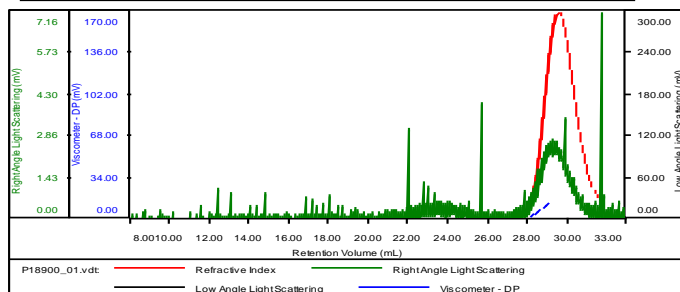
MMA-A
Company Polymer Source
1d_proton_160000 CDCl₃ (D1) Polymer_Source PSource 5



SEC of Homopolymer:

Sample ID: P18890-d5MMA

Concentration (mg/mL)	13.5512
Sample dn/dc (mL/g)	0.0840
Method File	PS80K-0923-2014-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P18890_01.vdt	3,466	3,560	3,779	1.027	0.0385