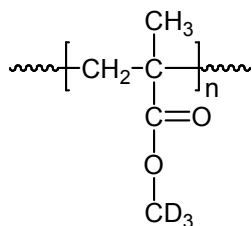


Sample Name: Deuterated Poly (methyl methacrylate)-d₃ ester

Sample #: P40388-d3PMMA

Structure:

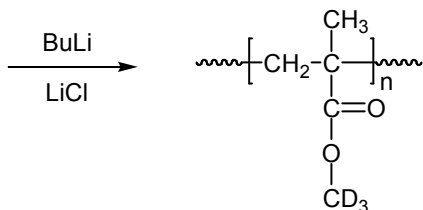
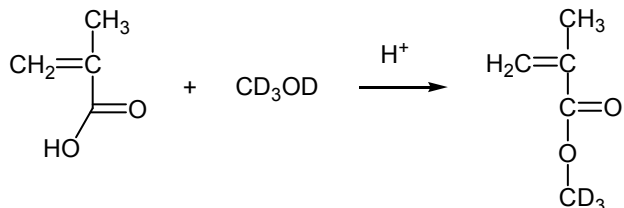


Composition:

Mn x 10 ³	PDI
3.5	1.45

Synthesis Procedure:

Deuterated poly (methyl methacrylate)-d₃ 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.

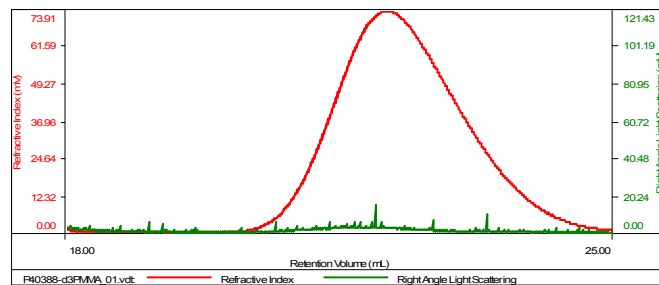
Solubility:

Deuterated poly (methyl methacrylate)-d₃ is soluble in THF, CHCl₃, toluene and dioxane. The polymer precipitates from hexanes, methanol and ethanol.

SEC of Homopolymer:

P40388-d3PMMA

Concentration (mg/mL)	5.6611
Sample dn/dc (mL/g)	0.0660
Method File	PS80K-Nov2016-6-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Mp (Da)
P40388-d3PMMA_01.v	3,365	4,940	1.468	0.0657	6,346