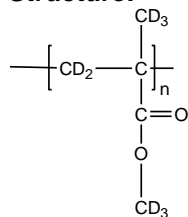Sample Name: **Poly(methyl methacrylate)-d8 Syndiotactic rich**

Sample #: **P18751-dPMMA**

Structure:

**Composition:**

Mn x 10^3	PDI
68.0	1.12

Synthesis Procedure:

Deuterated poly(methyl methacrylate)-d_8 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:
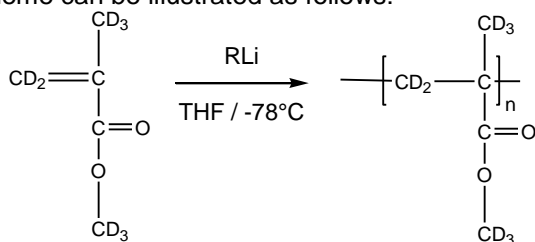
Characterization:

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. ^{1}H NMR analysis was carried out on Varian instrument at 500MHz.
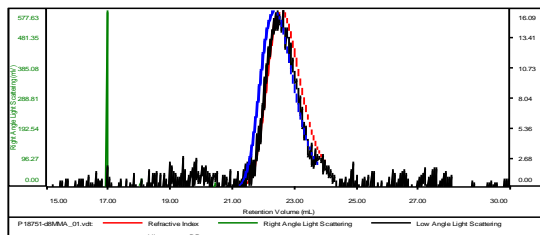
Solubility:

Deuterated poly(methyl methacrylate)-d_8 is soluble in THF, CHCl$_3$, toluene and dioxane. The polymer precipitates from hexanes, methanol and ethanol.

SEC of Homopolymer:

Sample ID: P18751-d8MMA

Concentration (mg/mL)	8.8297
Sample dn/dc (mL/g)	0.0840
Method File	PS80K-Apr15-2014-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF

Sample	Mn	Mw	Mp	Mw/Mn	IV
P18751-d8MMA_01.vdt	68,207	76,553	76,962	1.122	0.1257