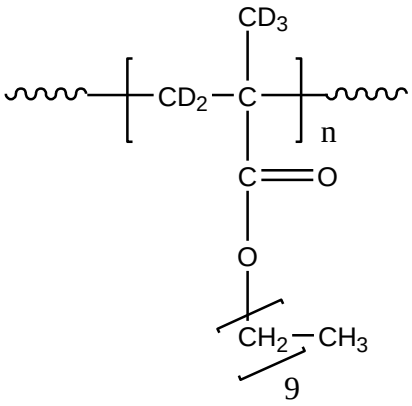
Sample Name:

Partially Deuterated (d5) Poly(n-decylmethacrylate)

Sample #: **P6400-d5PDCMA**

Structure:

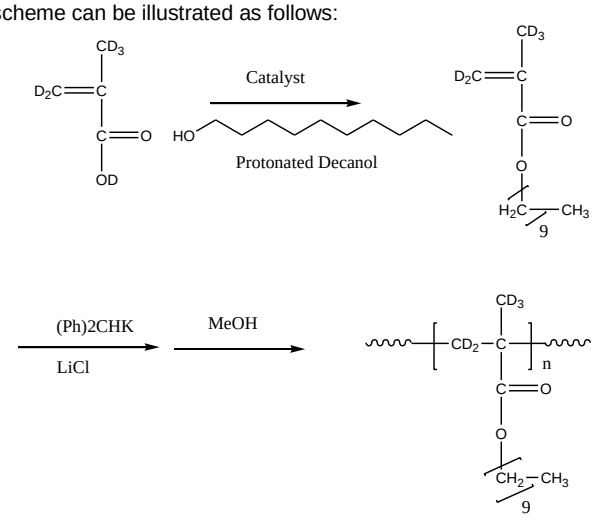


Composition:

Mn x 10^3	PDI
4.5	1.3

Synthesis Procedure:

Deuterated poly(n-decyl methacrylate)-d5 is obtained by living anionic polymerization using (PH)2CHK as initiator. The polymerization of d5 DCMA monomer is carried out in THF at –78 °C in the presence of LiCl as additive. The polymerization scheme can be illustrated as follows:



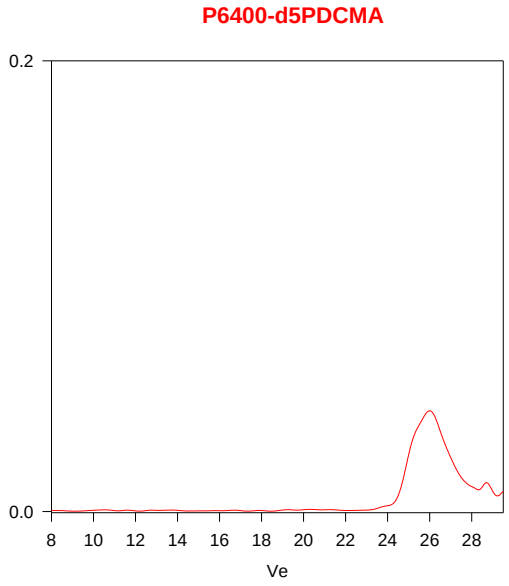
Characterization:

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(n-decyl methacrylate)-d5 is soluble in THF, $CHCl_3$, toluene and dioxane, Hexane . The polymer precipitates from cold methanol and ethanol.

SEC of Homopolymer:



Size Exclusion Chromatography of Deuterated Poly(n-decyl methacrylate)-d5:

M_n= 4500, M_w= 5900, M_w/M_n =1.3