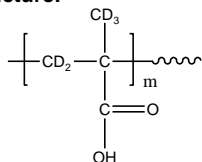


Sample Name:

Deuterated Poly(methacrylic acid) rich in syndiotactic contents

Sample #: **P5925B-d5MAA**

Structure:



Composition:

Mn x 10 ³	PDI
4.2	1.4

Synthesis Procedure:

Deuterated Poly(methacrylic acid) is synthesized by living anionic polymerization of d14 t-butyl methacrylate or d5 ethoxy ethyl methacrylate followed by hydrolysis of the t-butyl or ethoxy ethyl group.

Characterization:

The molecular weight and polydispersity index (PDI) of deuterated Poly(methacrylic acid) are obtained by size exclusion chromatography based on its precursor in the ester form.

Hydrolysis: The removal of tert.butyl ester moiety or ethoxy ethyl to COOH was checked by the disappearance of their characteristics on FTIR.

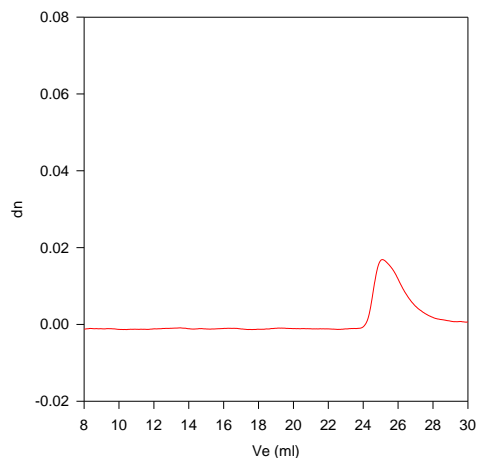
Solubility: Polymer is soluble in dioxane methanol, ethanol.

Polymer is dried from the dioxane solution (freeze dried polymer).

SEC of the polymer (poly tert.butyl methacrylate)

P5925B-d5 Ethoxy ethylmethacrylate

(precursor of P5925B-d5MAA)



Size Exclusion Chromatography of deuterated d5 ethoxy ethyl methacrylate)

M_n=7700, M_w=11000, PI=1.4

Poly(deuterated d5-methacrylic acid): M_n=4200, PI=1.4

References:

1. **S. K. Varshney**, Z. Gao, Xing Fu Zhong, A. Eisenberg "Effect of Lithium Chloride on the "Living" Polymerization of tert-Butylmethacrylate and Polymer Microstructure Using Monofunctional Initiators" *Macromolecules*, 1994, 27, 1076.