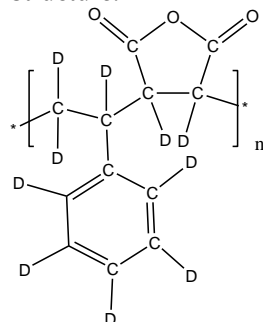


Sample Name:
Alternating Copolymer completely Deuterated
Poly(styrene-alt-maleic anhydride)

Sample #: P 11251-dPSM-anhydride

Structure:



Composition:

Mn x 10 ³ dPS-alt-Manhydride	9.0
PDI	1.10
Tg (°C)	139

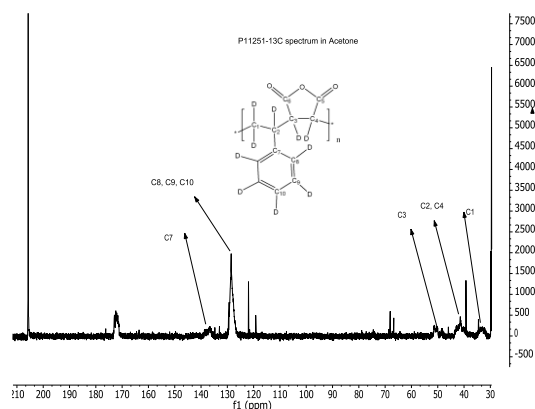
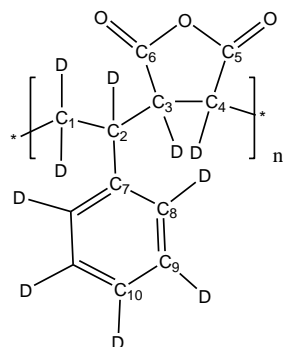
Synthesis Procedure:

Alternating Copolymer deuterated styrene (d8) and deuterated maleic anhydride (d2) is prepared by RAFT polymerization followed by removal of terminal disulfide group by free radical process.

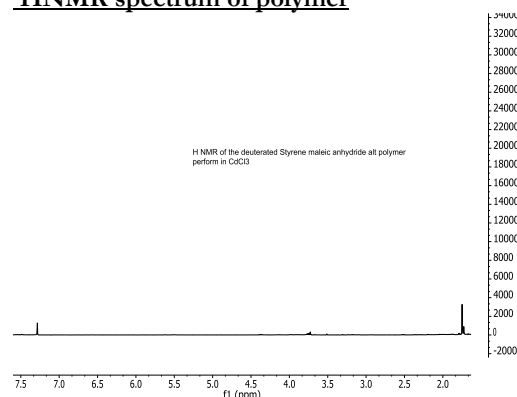
Characterization:

The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). It is important to mention that the SEC must be carried out in dried THF to avoid any ring opening of maleic anhydride moieties that results in the ambiguity of the results. THF was dried and distilled to use as carrier solvent. The column temperature was kept at 40 °C. Polymer is soluble in acetone, THF.

The copolymer composition was calculated from ¹³C-NMR spectroscopy. The acetone solvent was used for ¹³C NMR. The characterization was performed using flip angle of 30°, a relaxation time of 5s and suppression of NOE. The assignment are as follows:

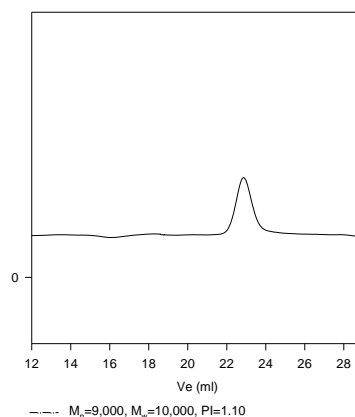


¹H NMR spectrum of polymer



SEC for the polymer

P11251-dPSManhydride



DSC thermogram for the sample

