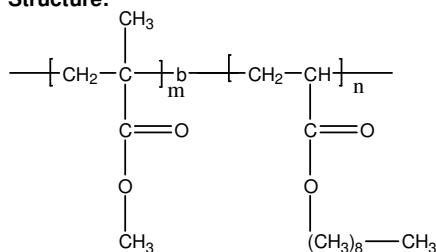


**Sample Name:** Poly(methyl methacrylate-b-Nonyl acrylate)

**MMA-NA after trans esterification of tert.butyl group**

**Sample #:** P9046A-MMANA

**Structure:**

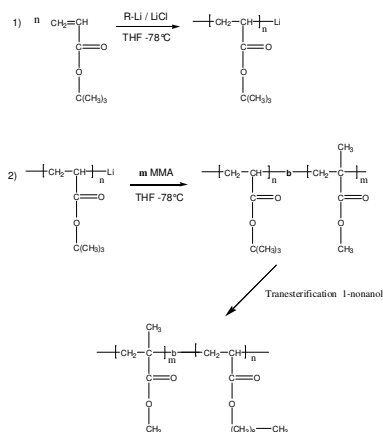


**Composition:**

Mn x 10 <sup>3</sup> MMA-b-NA	PDI
13.0-b-203.0	1.25

**Synthesis Procedure:**

Poly(methyl methacrylate-b-nonyl acrylate) is prepared by living anionic polymerization by trans esterification of the ter-butyl ester to nonyl ester in the presence of 1-nonanol.



**Characterization:**

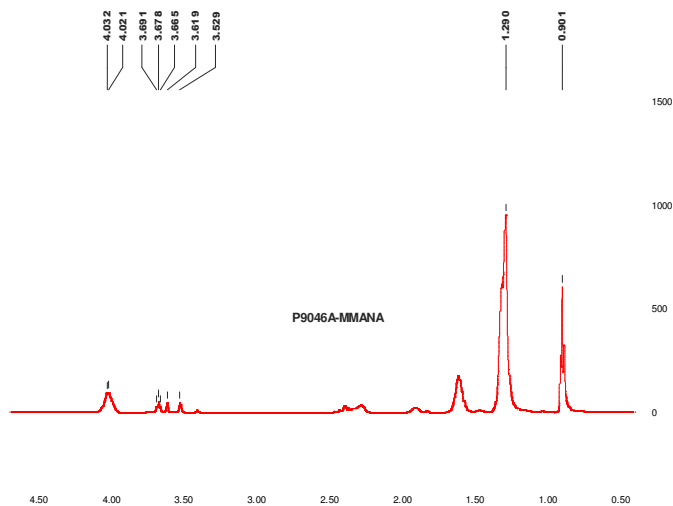
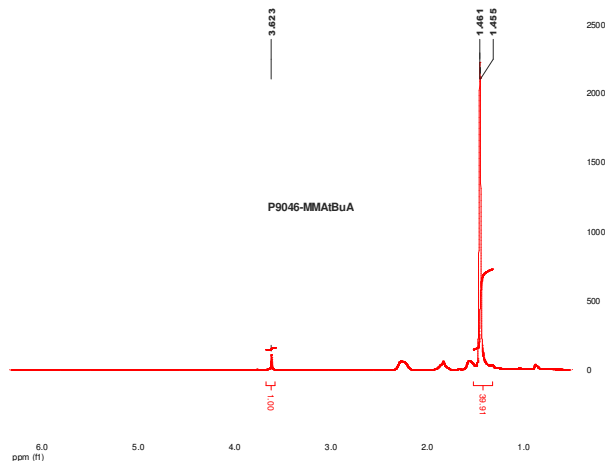
An aliquot of the anionic poly(t-butyl acrylate) block was terminated before addition of methyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the methyl methacrylate protons at about 3.6 ppm with the peak area of (OCH<sub>2</sub>) of nonyl acrylate protons at about 4.2 ppm. Copolymer PDI is determined by SEC.

**Solubility:**

Poly(nonyl acrylate-b-methyl methacrylate) is soluble in THF, CHCl<sub>3</sub>, toluene, dioxane. The polymer can precipitate from ethanol/water or methanol/water mixtures.

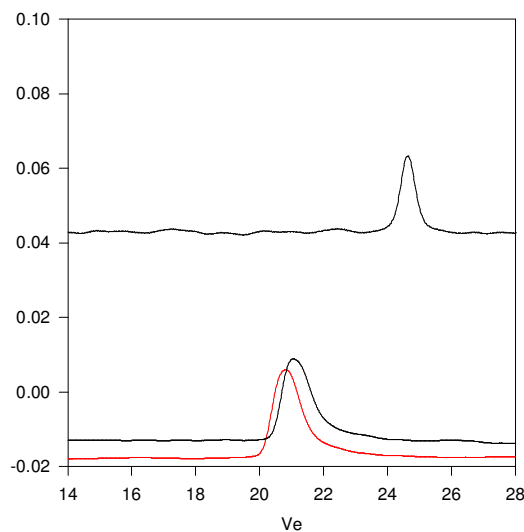
**<sup>1</sup>H-NMR Spectrum of the block copolymer:**

**MMA-tBuA**



**SEC of the block copolymer:**

**P9046-MMANA**



Size Exclusion Chromatography :

— Poly methylmethacrylate, M<sub>n</sub>=13000 M<sub>w</sub>/M<sub>n</sub>=1.18

— Block Copolymer PMMA(13000)-tBuA(180,000), M<sub>w</sub>/M<sub>n</sub>=1.25

After esterification: MMA-nonyl acrylateMn: 13,000-b-203,000 Mw/Mn 1.25