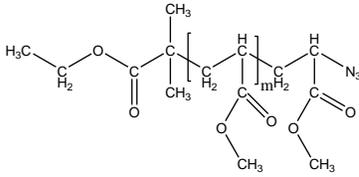


**Sample Name:**  $\alpha$ -azido end functionalized Poly (methyl acrylate)

**Sample #:** P41622-MA-N3

**Structure:**



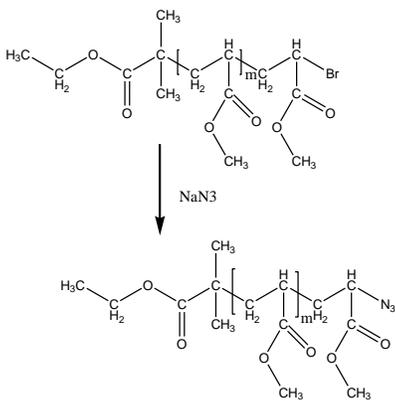
**Composition:**

$M_n \times 10^3$	PDI
1.7	1.17

**Synthesis Procedure:**

The Br end functionalized PMA was prepared by ATRP polymerization process followed by reaction Br end PMA with NaN<sub>3</sub> in DMF.

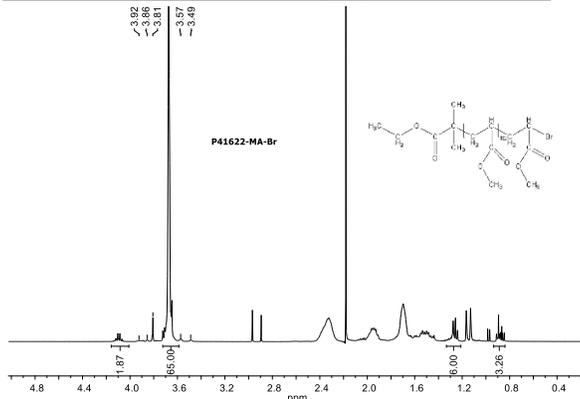
The following reaction scheme shows how the product was prepared:



**Characterization:**

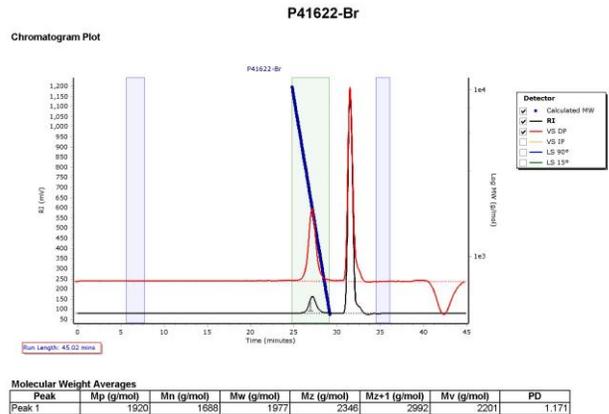
The product was characterized by size exclusion chromatography (SEC), <sup>1</sup>H NMR and FTIR.

**<sup>1</sup>H NMR spectrum of the polymer: PMA-Br**



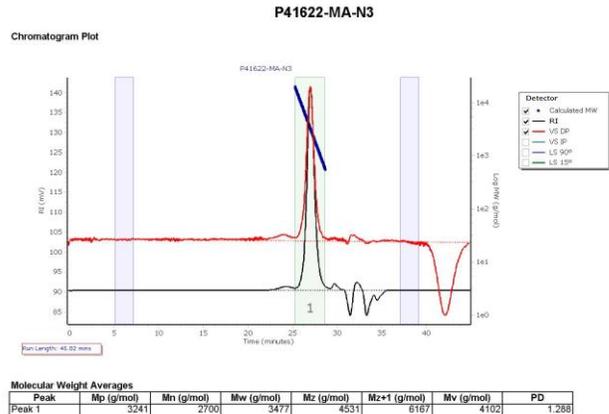
**SEC elugram of the PMA-Br:**

Agilent GPC/SEC Software

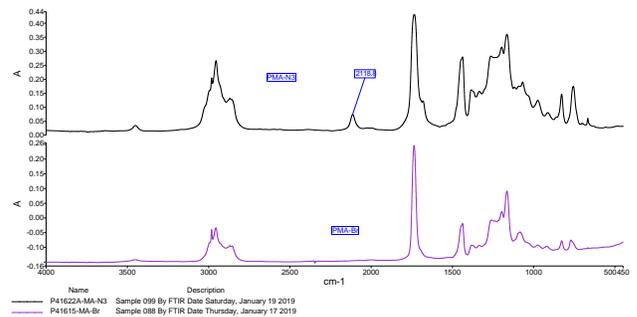


**After converting Br to N3 end group the elution count of the obtain polymer in their SEC changes to lower elution count:**

Agilent GPC/SEC Software



**FTIR spectra of the PMA-Br and PMA-N3:**



**FTIR Spectra:** Presence of Azide end groups were observed by FTIR (Cm-1): 2118(s) and compare with Carbonyl 1735 (s).

**Calibration for FTIR:**

Methyl 2-azidopropionate and Bromo end functionalized poly methyl acrylate were mixed in several ratios in CHCl<sub>3</sub> and FTIR were made in CHCl<sub>3</sub> in a solution cell. The integration of the peak corresponding to the azide and carbonyl groups were compared. It gives you an approximate functionalization. The details are reported in our publication: Xing Fu, Zhong, S. K. Varshney, and A. Eisenberg

"Critical Micellization Length for Polystyrene-b-Na-Acrylate Block Ionomers" CA Vol 117, 26, 252280  
Macromolecules 1992, 25, 7160-7167