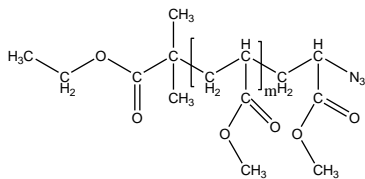


**Sample Name:**  $\alpha$ -azido end functionalized Poly (methyl acrylate)

**Sample #:** P41616-MA-N3

**Structure:**



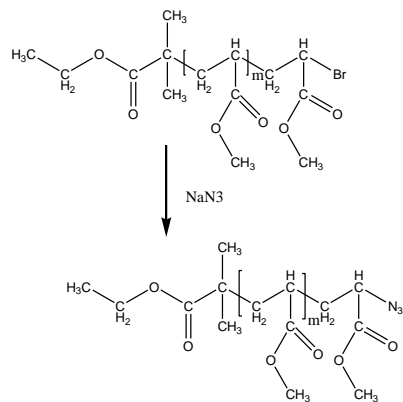
**Composition:**

$M_n \times 10^3$	PDI
3.7	1.4

**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.

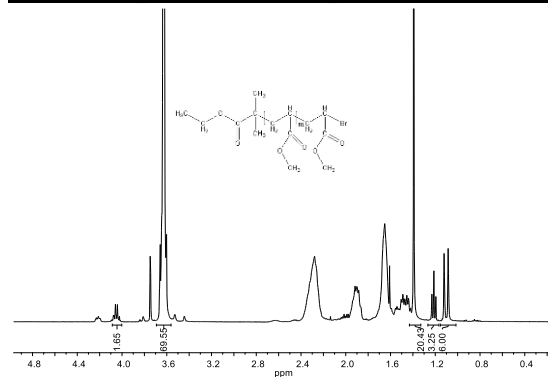
The following reaction scheme shows how the product was prepared:



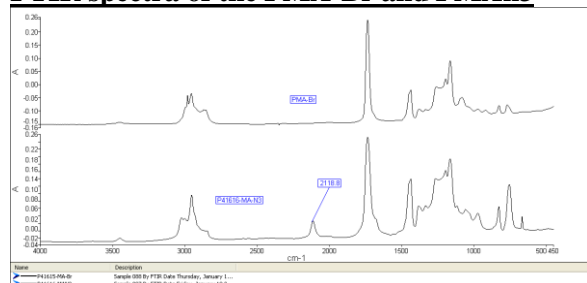
**Characterization:**

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**



### **FTIR spectra of the PMA-Br and PMA<sub>n</sub>3**



### **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 ration 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.