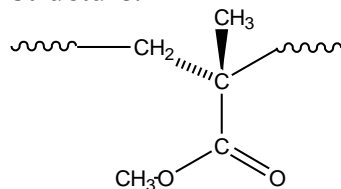


**Sample Name:** Carboxy terminated Poly(isotactic methyl methacrylate)

**Sample #:** P6170-iMMACOOH

**Structure:**

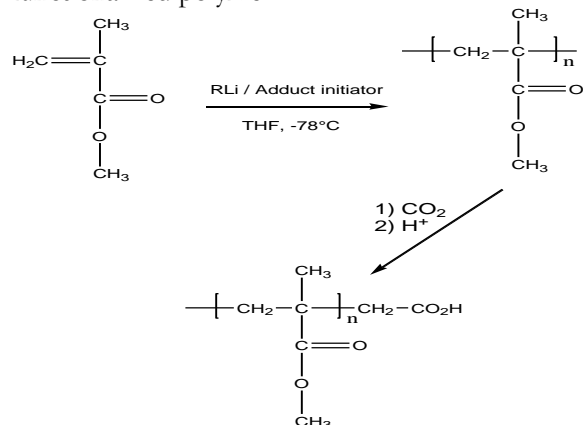


**Composition:**

$M_n \times 10^3$	PDI
109.8	1.21
Degree of functionality	90%
$T_g$ for the polymer	50°C

### Synthesis Procedure:

Carboxy terminated poly(methyl methacrylate) is obtained by living anionic polymerization in the presence of an adduct. Termination of the reaction with dried  $\text{CO}_2$  produced a carbonyl end functionalized polymer:



### Characterization:

The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography. The carboxyl functionality is determined by acid-base titration.

### Thermal analysis:

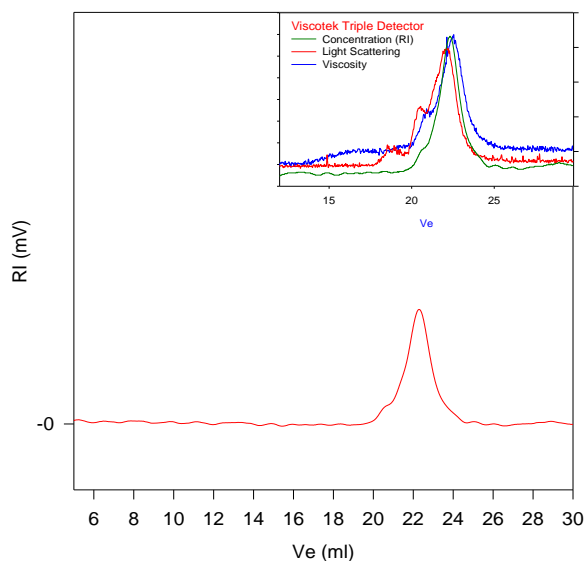
Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature ( $T_g$ ) has been considered.

### Solubility:

Poly(methyl methacrylate) is soluble in THF,  $\text{CHCl}_3$ , toluene and dioxane. The polymer precipitates from hexanes, cold methanol and cold ethanol. The polymer may be soluble in methanol at room temperature depending on its molecular weight.

### SEC of the functional polymer:

**P6170-iMMA-COOH**



Size Exclusion Chromatography of functionalized poly(methyl methacrylate):

$M_n = 109,800$ ,  $M_w = 133,100$ ,  $M_w/M_n = 1.21$ ,  $R_g = 14.21$  nm. (from LS)

— RI detector, Unlabeled PMMA (pick out before  $\text{CO}_2$ )

(in up-right box, triple detector for carboxy terminated PMMA)

### DSC thermogram for the sample:

