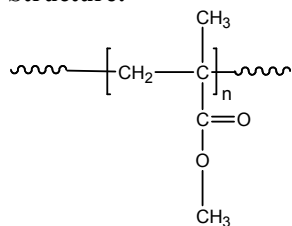


**Sample Name:** Poly(methyl methacrylate)  
*Syndiotactic rich contents > 85%*

**Sample #:** P8079A-MMA  
**Syndio contents:** 86%; hetero 14%; iso: 0.0%

**Structure:**



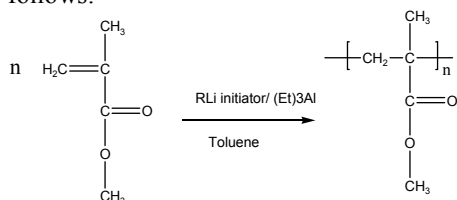
**Composition:**

Mn x 10 <sup>3</sup>	PDI
35.0	1.27

### Synthesis Procedure:

Syndiotactic Poly(methyl methacrylate) is obtained by living anionic polymerization using tert.BuLi as initiator in the presence of triethyl aluminum in toluene. The polymerization of MMA monomer carried out at -78 °C in the presence. For further details please see the following references.<sup>(1-4)</sup>. The polymerization scheme can be illustrated as follows:

syndiotactic > 85%



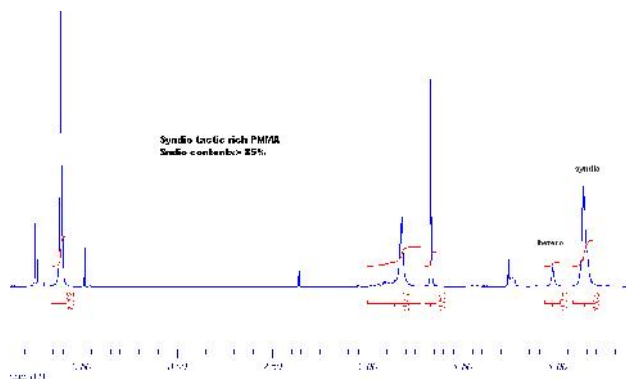
### Characterization:

The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscoek Co. <sup>1</sup>H NMR analysis was carried out on Varian instrument at 500MHz.

### Solubility:

Poly(methyl methacrylate) is soluble in THF, CHCl<sub>3</sub>, toluene and dioxane. The polymer precipitates from hexanes, methanol and ethanol.

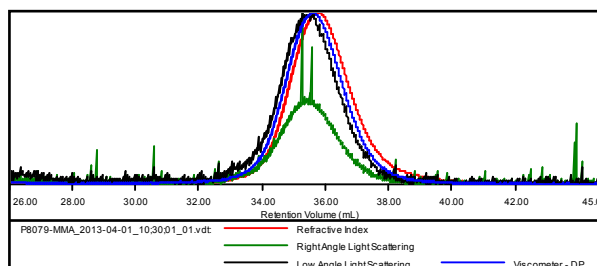
### NMR of Syndiotactic rich (> 85%) PMMA



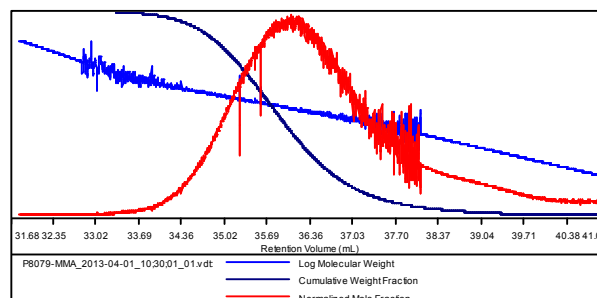
### SEC of Homopolymer:

**Sample ID:** P8079-MMA

Concentration (mg/mL)	14.2046
Sample dn/dc (mL/g)	0.0840
Method File	PS80K-Mar-2013-0002.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P8079-MMA_2013-04-01_10:30:01_01	34,951	44,519	42,809	1.274	0.2399



### References for further information:

- (a) S. K. Varshney, R. Fayt, Ph. Teyssie, US Patent 5,629,393, 1997 (b) Ph. Bayard, R. Fayt, Ph. Teyssie and S. K. Varshney, Vuillemin B, Phillipe, H, US patent 5,677,387, 1997. (c) Ph. Bayard, R. Fayt, Ph. Teyssie and S. K. Varshney, B, Vuillemin, H. Phillipe, US patent 5,687,534, 1997. (d) S. K. Varshney, R. Fayt, Ph. Teyssie, US Patent 5,723,559, 1998. (e) Ph. Teyssie, S. K. Varshney, R. Jerome, R. Fayt US patent, 4,826,941., 1989.
- Ph. Teyssie, Ph. Bayard, R. Jerome, S. K. Varshney, and J. S. Wang, *35th IUPAC International Union of Pure & Applied Chemistry International Symposium on Macromolecules* 1994, 67.
- Ph. Teyssie, R. Fayt, J. P. Hautekeer, C. Jacobs, R. Jerome, L. Leemans and S. K. Varshney *Makromolekular Chemie, Macromol. Symp.*, 1990, 32, 61-73.
- S. K. Varshney, J. P. Hautekeer, R. Fayt, R. Jerome, and Ph. Teyssie *Macromolecules*, 1990, 23, 2618-2622.