

# Product Profile

## Identification

**Product Name:** POLY(METHYL METHACRYLATE), Syndiotactic (SYNDIO > HETERO>ISO)

CAS Number : 9011-14-7

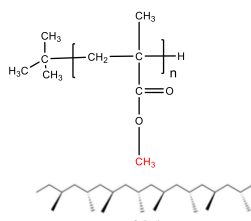
**Product Lot Number:** P8081R-MMA

*Synonym(s):*

*Syndiotactic PMMA, Syndiotactic methyl methacrylate polymer, Syndiotactic poly(methyl methacrylate)*

**Linear Formula:**  $(C_5H_8O_2)_n$

**Product Chemical Architecture:**



**Composition:**

Mn x 10 <sup>3</sup>	Mw/Mn (PDI)	Microstructure of Polymer by <sup>1</sup> H NMR ( <i>syn:hetero:iso</i> )
15.0	1.02	Syndio > 85%

**Method of Synthesis** Using Grignard catalyst

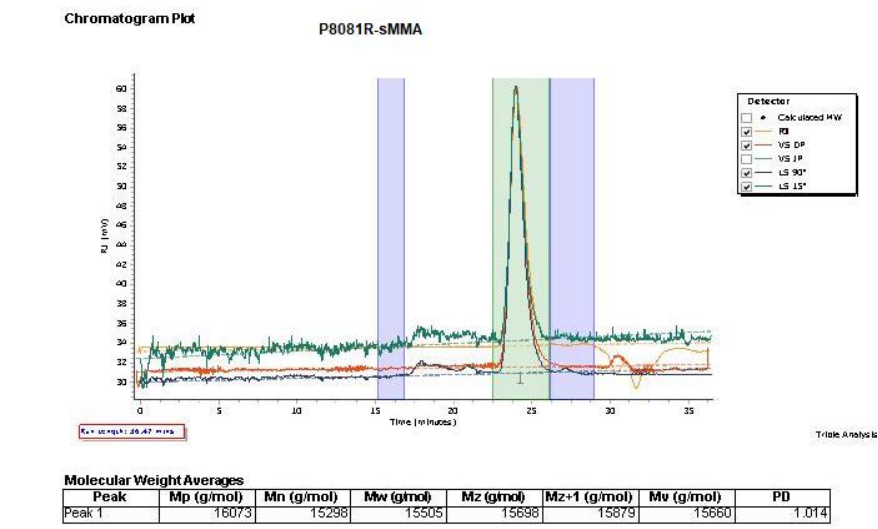
**Solubility in different solvents**

THF	✓		
CHCl <sub>3</sub>	✓	Acetone	✓
Toluene-Hot	✓		

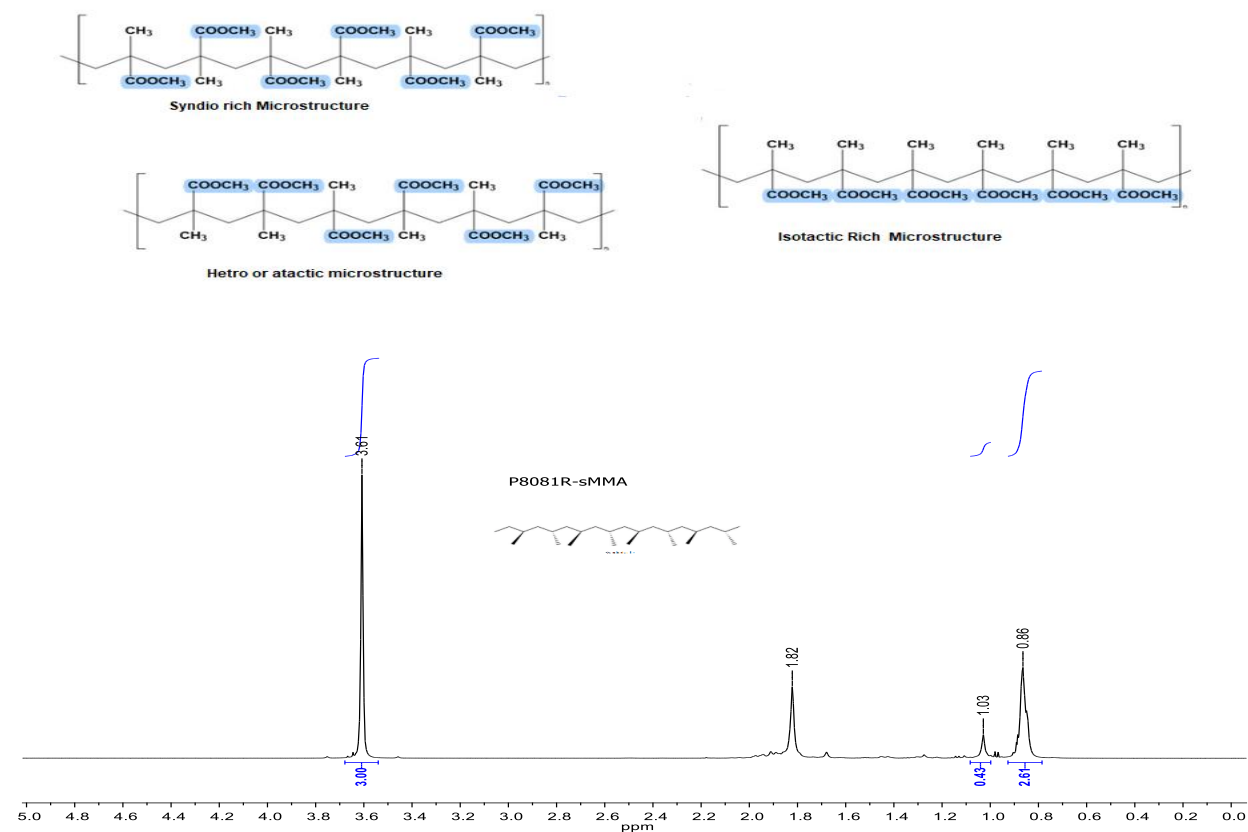
**Purification of Polymer:** By solvent-non solvent process using EDTA and filtration to remove inorganic salt.

**Validation of Architecture:**

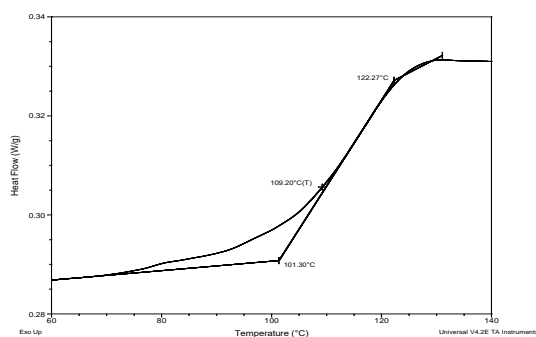
A. Gel Permeation Chromatography (GPC), SEC- Profile



**B. NMR (HNMR) of polymer:**



**C. DSC thermogram (2<sup>nd</sup> heating scan, 10°C/min):**



**D. Summary of DSC results for PMMA of different tacticity:**

<i>PMMA microstructure</i>	<i>Tacticity Syndio : Iso : Hetero</i>	<i>T<sub>g</sub> (°C)</i>
Syndiotactic >79%	79 : 19 : 2	120
Syndiotactic >85%	86 : 0 : 14	123
Isotactic >97%	0 : 97 : 3	44
Atactic	56 : 6 : 38	97

