

Product Profile

Identification

Product Name: Poly(methyl methacrylate), isotactic (iso>syndio>hetero)

CAS Number : 9011-14-7

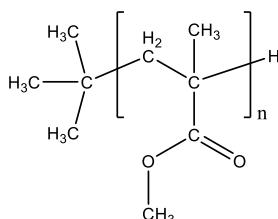
Product Lot Number: P2059R-iMMA

Synonym(s):

Isotactic PMMA, Isotactic methyl methacrylate polymer, Isotactic poly(methyl methacrylate)

Linear Formula: $(C_5H_8O_2)_n$

Product Chemical Architecture:



Composition:

Mn x 10 ³	Mw/Mn (PDI)	Microstructure of Polymer by ¹ H NMR (<i>iso:syn:hetero</i>)
19.0	1.3	95: 3:2

Method of Synthesis Using Grignard catalyst

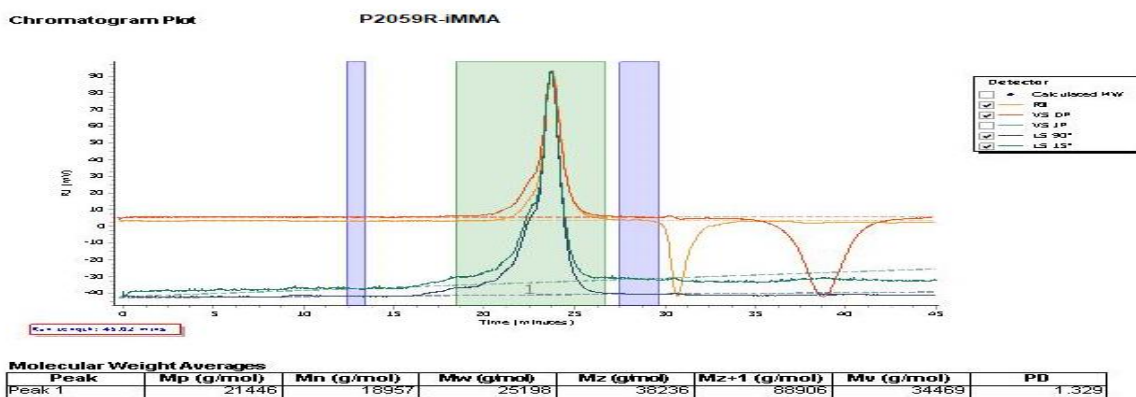
Solubility in different solvents

THF	✓		
CHCl ₃	✓	Acetone	✓
Toluene-Hot	✓		

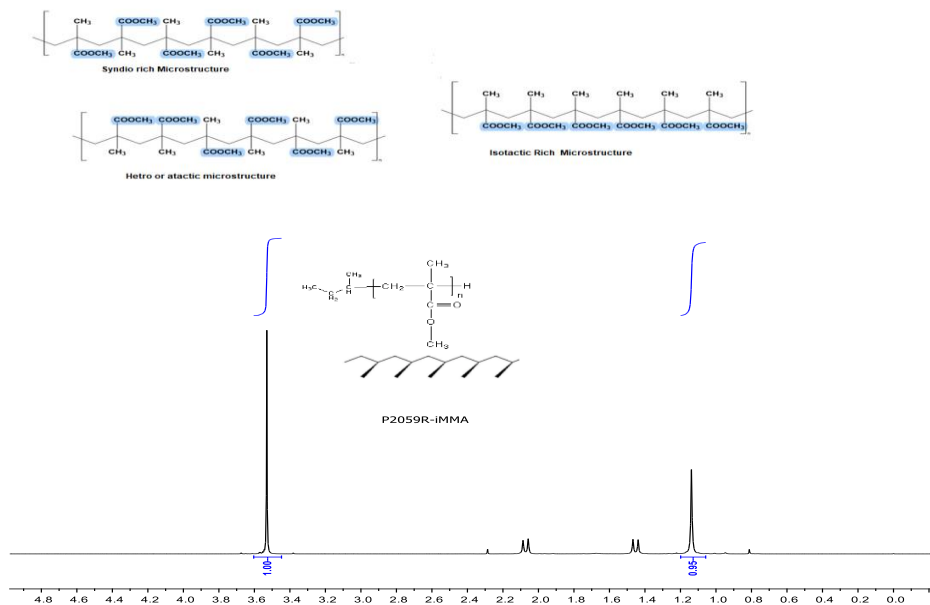
Purification of Polymer : By solvent-non solvent process and filtration to remove inorganic salt.

Validation of Architecture:

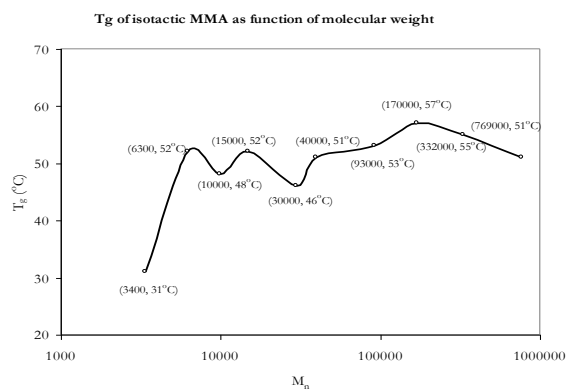
A. Gel Permeation Chromatography (GPC), SEC- Profile



B. NMR (HNMR) of polymer:



C. DSC thermogram (2nd 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_g (°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