

Product Profile

Identification

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

CAS N/umber : 9011-14-7

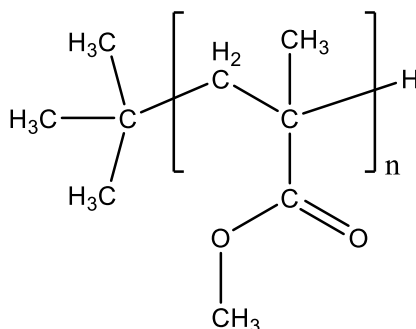
Product Lot Number: P6322R-iMMA

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>)
80.0	1.05	95: 3:2

Method of Synthesis Using Grignard catalyst

Solubility in different solvents

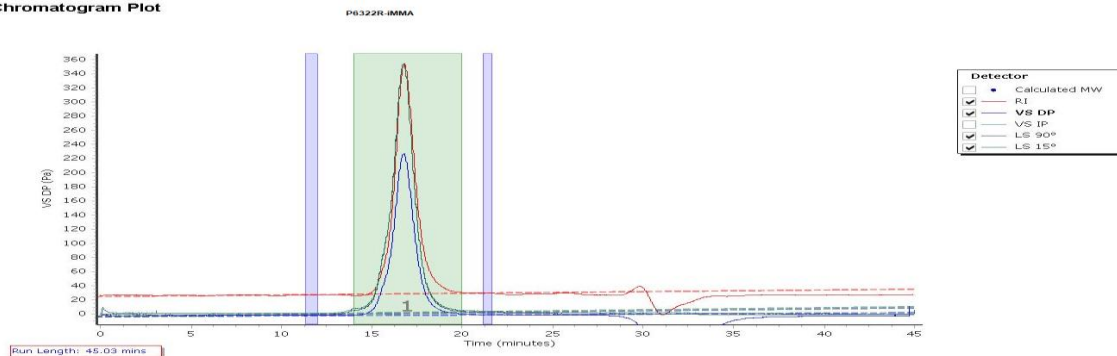
THF	√		
CHCl ₃	√	Acetone	√
Toluene-Hot	√		

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

Validation of Architecture:

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

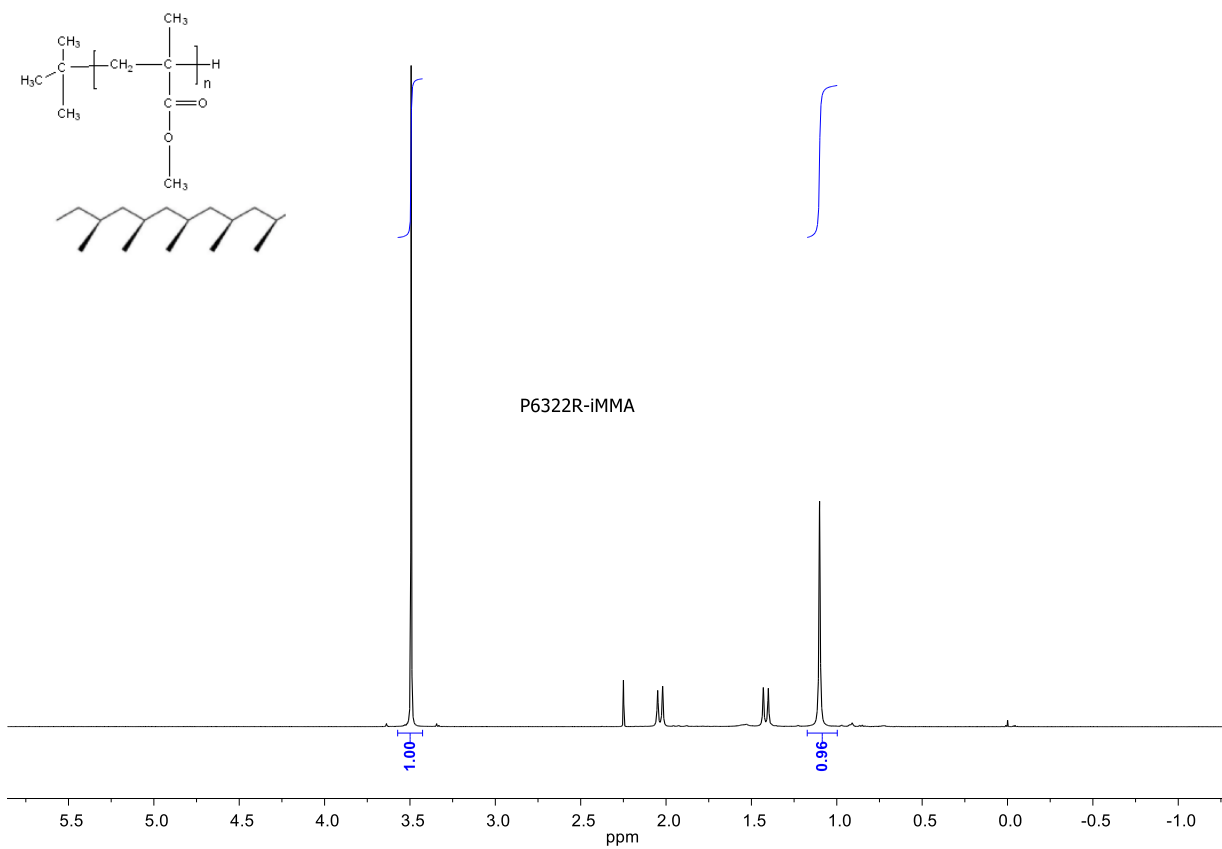
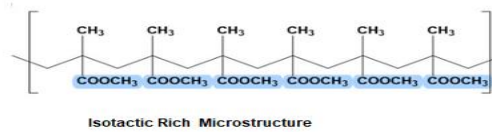
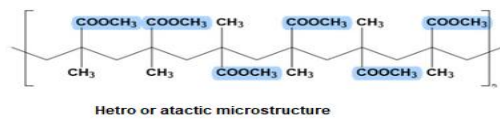
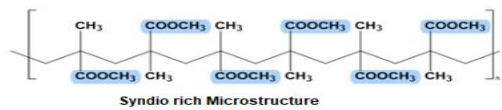
Chromatogram Plot



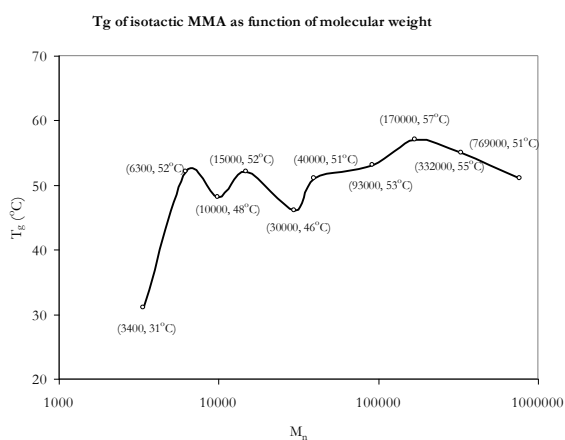
Molecular Weight Averages

Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	84312	79800	83691	87357	90955	86823	1.049

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