

Product Profile

Identification

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

CAS Number : 9011-14-7

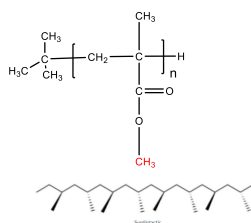
Product Lot Number: P44507F2-MMA

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 ³	Mw/Mn (PDI)	Microstructure of Polymer by ¹ H NMR (<i>syn:hetero:iso</i>)
30.0	1.11	Syndio > 85%

Method of Synthesis Using Grignard catalyst

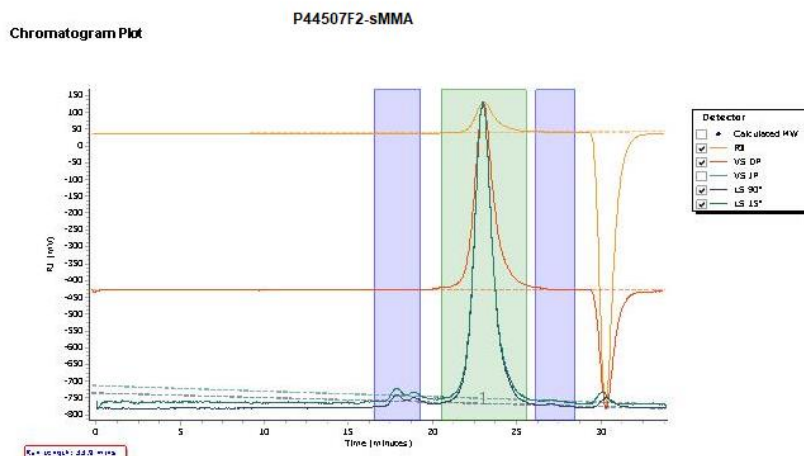
Solubility in different solvents

THF	✓		
CHCl ₃	✓	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

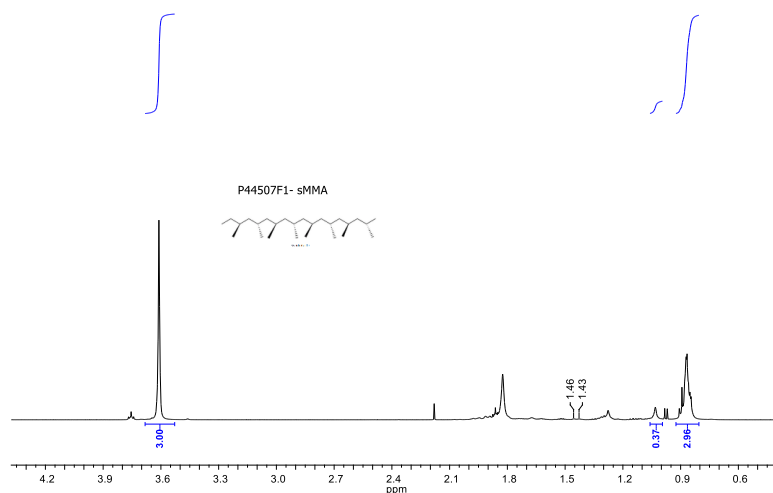
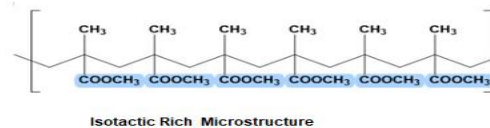
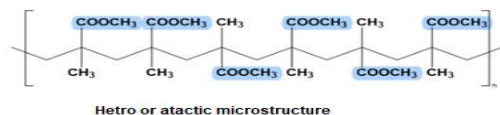
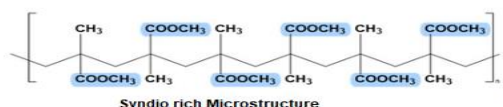


B.

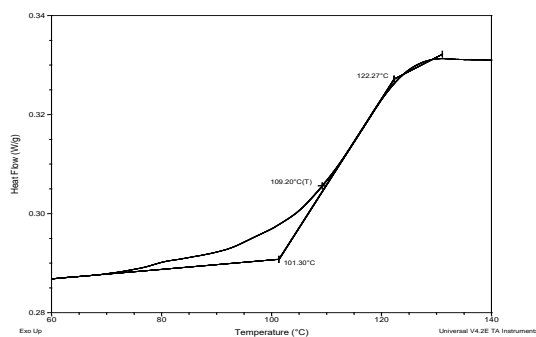
Molecular Weight Averages

Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PDI
Peak 1	35050	29558	33015	36064	38865	35630	1.117

C. NMR (HNMR) of polymer:



D. DSC thermogram (2nd heating scan, 10°C/min):



E. Summary of DSC results for PMMA of different tacticity:

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