

Product Profile

Identification

Product Name: Poly(methyl methacrylate), atactic (different tacticity ratio)

CAS Number : 9011-14-7

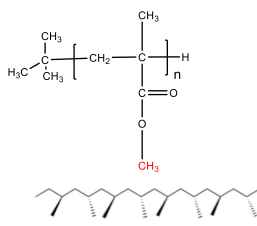
Product Lot Number: P45007E-MMA

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 (syn:hetero:iso)
24.0	1.35	72:24:4

Method of Synthesis Using Grignard catalyst

Solubility in different solvents

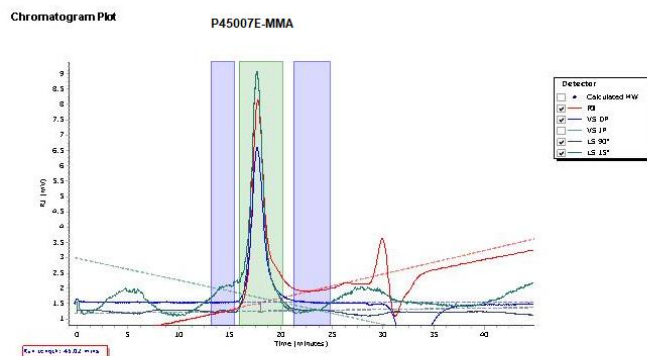
THF	√		
CHCl ₃	√	Acetone	√
Toluene-Hot	√		

Purification of Polymer:

By solvent-non solvent process using EDTA and filtration to remove inorganic salt.

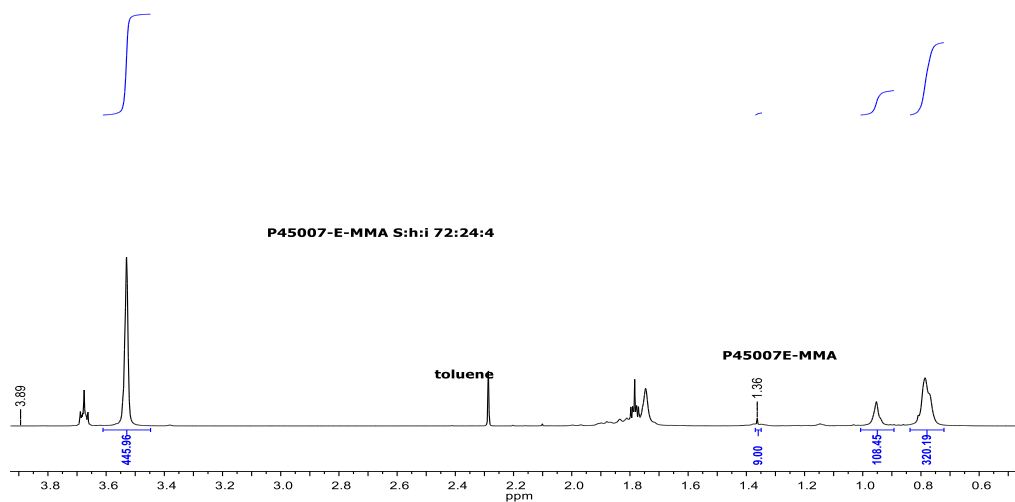
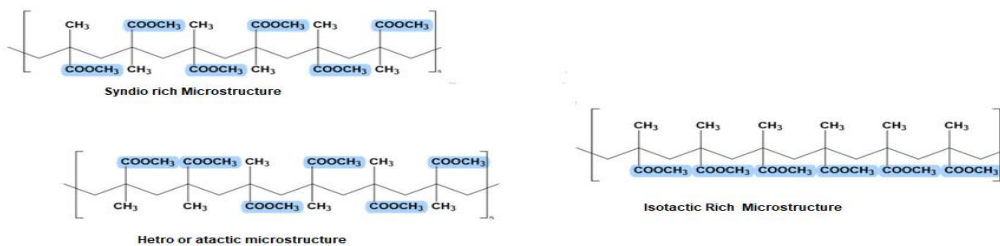
Validation of Architecture:

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

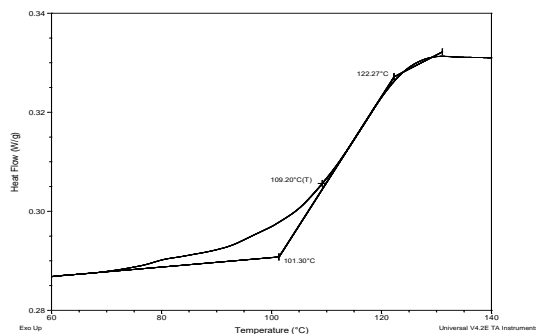


Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mw (g/mol)	PD
Peak 1	34341	23942	32432	40207	47824	38079	1.355

B. NMR (HNMR) of polymer:



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



D. 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