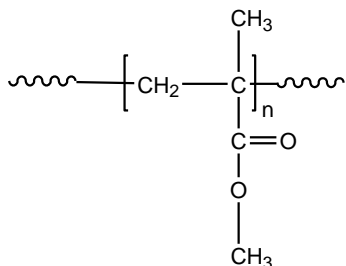


Sample Name: **Poly (methyl methacrylate)**
Syndiotactic rich polymer

Sample #: **P19395C-MMA**

Structure:



Composition:

Mn x 10 ³	PDI
159.1	1.1
Syndio : Hetero	83: 17
Iso	< 1%

Synthesis Procedure:

Tacticity of the poly(methyl methacrylate) is tailored by anionic polymerization of MMA monomer in different polarity solvents mixture and using different ligands.

Characterization:

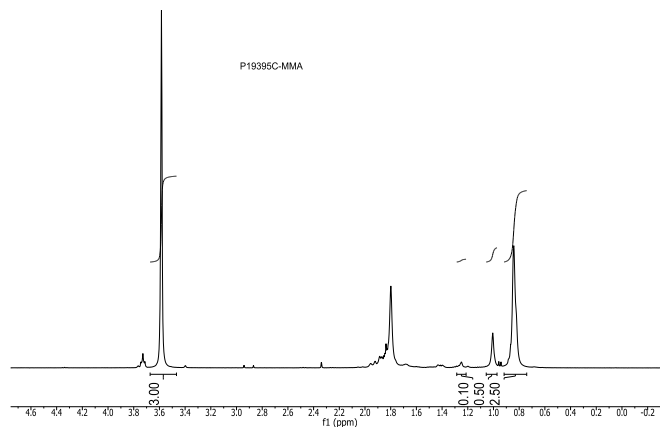
Tacticity of the polymer was determined by ¹H NMR. The molecular weight and polydispersity index (PDI) were obtained by size exclusion chromatography (SEC) in DMF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors.

Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T_g) of the sample has been considered.

Solubility:

The polymer is soluble in chloroform, THF and DMF.

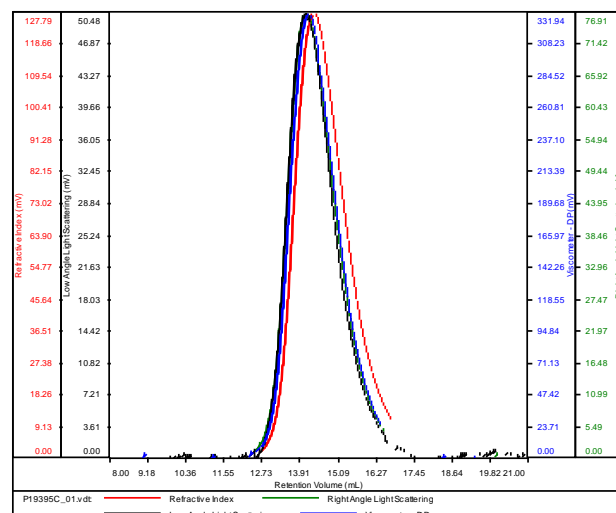
¹H NMR spectrum of PMMA:



SEC elugram of PMMA homopolymer:

P19395C

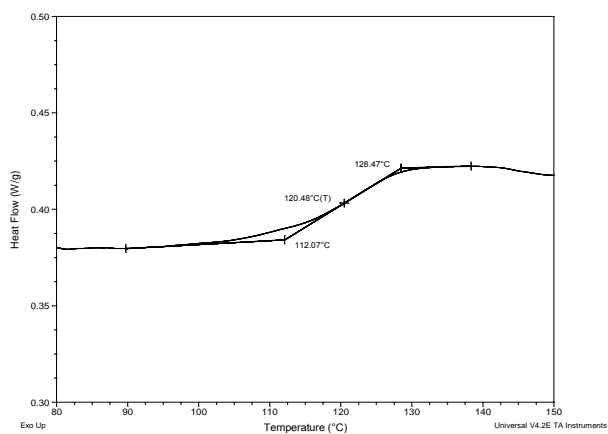
Conc	15.0787
dn/dc	0.0650
Solvent	DMF w 0.023M LiBr
Flow Rate	0.7000
Method	PS100k_2017-Oct11-0000.vcm



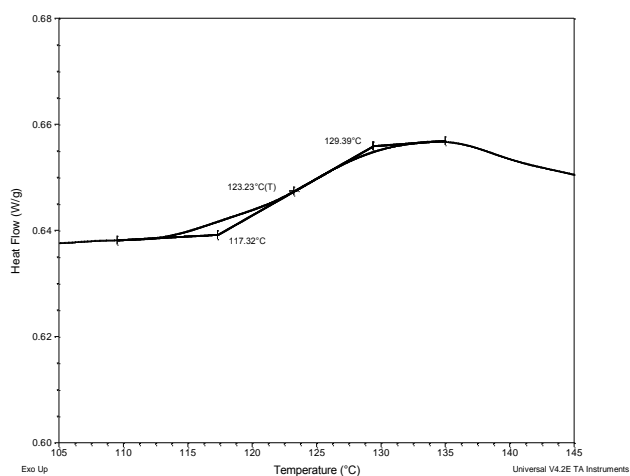
Sample	Mn	Mw	Mp	Mw/Mn	IV
P19395C_01.vdt	159,172	175,310	175,801	1.101	0.4422

DSC Thermograms of PMMA:

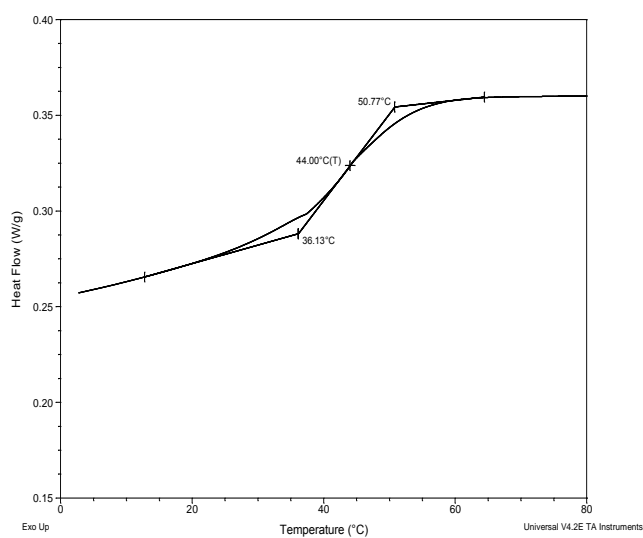
(a) syndiotactic >79%



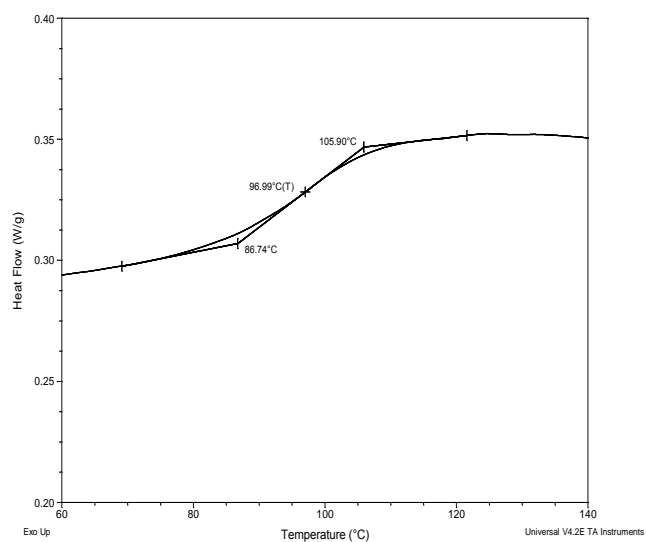
(b) syndiotactic >85%



(c) isotactic >97%



(d) atactic



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