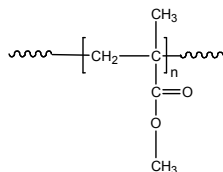


Sample Name: Poly (methyl methacrylate)
Different microstructure

Sample #: P40238-MMA

Structure:



Composition:

$M_n \times 10^3$	PDI
72.5	1.6
Syndio : Hetero : Iso	60 : 38 : 2
T_g	101 °C

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:

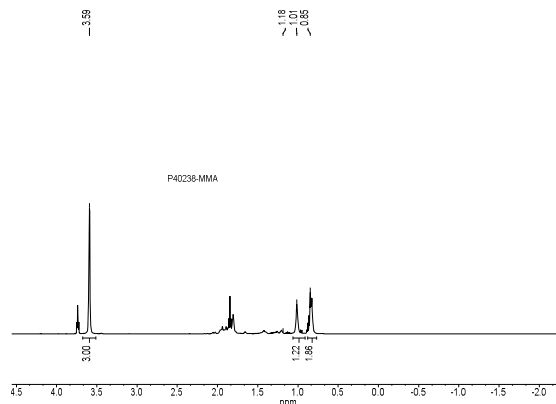
Tacticity of the polymer was determined by ^1H NMR. The molecular weight and polydispersity index (PDI) were obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co.

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

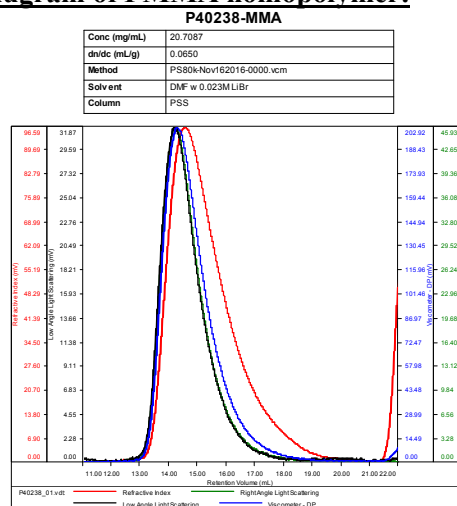
Solubility:

The polymer is soluble in chloroform.

^1H NMR spectrum of PMMA:

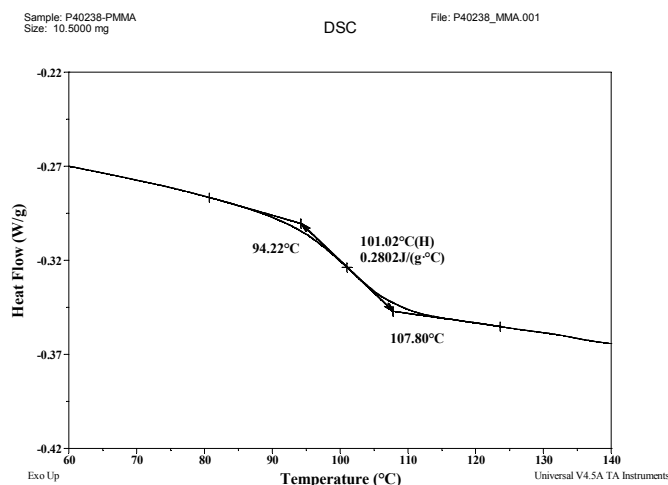


SEC elugram of PMMA homopolymer:



Sample	M_n	M_w	M_p	M_w/M_n	PDI
P40238_01.vdt	72,533	118,756	145,059	1.637	0.1949

DSC thermogram of the polymer:

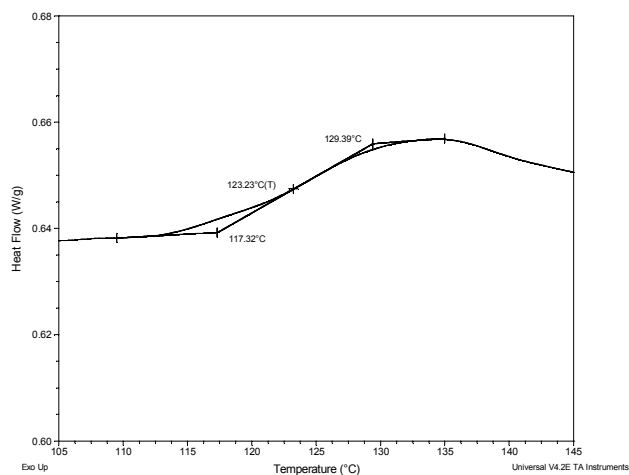


Thermograms of PMMA:

(a) syndiotactic >79%



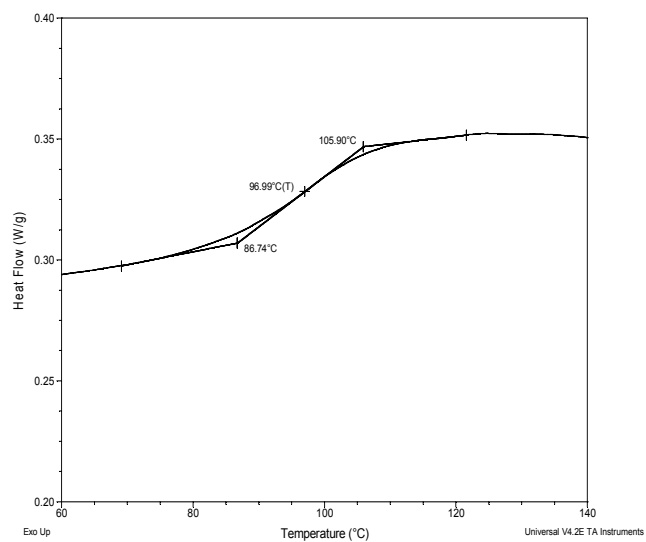
(b) syndiotactic >85%



(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