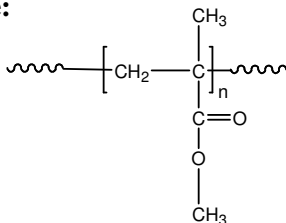


Sample Name: Poly(methyl methacrylate)

Different microstructure

Sample #: P8515-MMA

Structure:



Composition:

$M_n \times 10^3$	PDI
47.3	1.05

Syndio : Hetero : Isotactic	57 : 38 : 5
-----------------------------	-------------

Synthesis Procedure:

Poly(methyl methacrylate) is obtained by controlled radical polymerization or GTP process.

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.

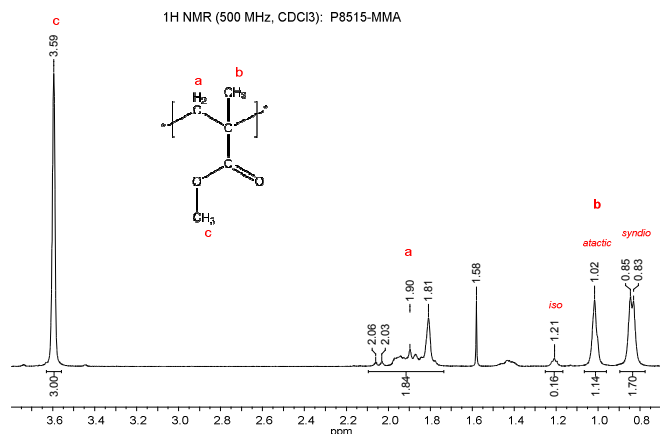
Solubility:

The polymer is soluble in THF, CHCl_3 , toluene and dioxane. The polymer precipitates from cold methanol and ethanol.

T_g vs MW for selected atactic PMMA:

$M_n \times 10^3$	T_g ($^\circ\text{C}$)	$M_n \times 10^3$	T_g ($^\circ\text{C}$)
1.1	51	36	98
2.5	76	55	111
5.0	91	70	107
15	101	127	115
19	107	230	114
29	96	700	121

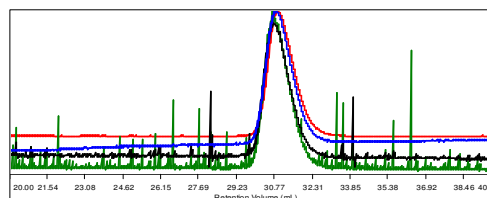
^1H NMR spectrum of PMMA:



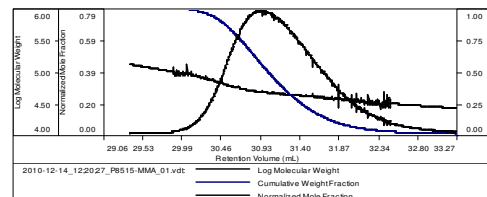
SEC elugram of PMMA homopolymer:

Sample ID: P8515-PMMA

Concentration	4.0260
Sample dn/dc	0.0890
Method File	PS80K-Dec9-0001.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	M_n	M_w	M_z	M_w/M_n	IV	Rh
2010-12-14_122027_P8515-MMA_01.vdl	47,319	49,800	52,850	1.052	0.3428	8.40



DSC thermogram:

T_g of atactic poly methyl methacrylate as function of molecular weight

