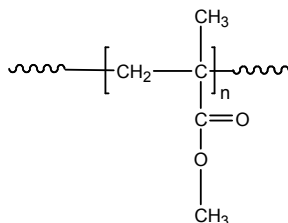


Sample Name: Poly(methyl methacrylate)

Different microstructure

Sample #: P9790-MMA

Structure:



Composition:

Mn x 10 ³	PDI
24.3	1.19
Syndio : Hetero : Isotactic	52 : 41 : 7

Synthesis Procedure:

Poly(methyl methacrylate) is obtained by free radical polymerization or ATRP using CuBr as catalyst / or GTP process in toluene or THF.

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°C/min. The inflection glass transition temperature (T_g) of the sample has been considered.

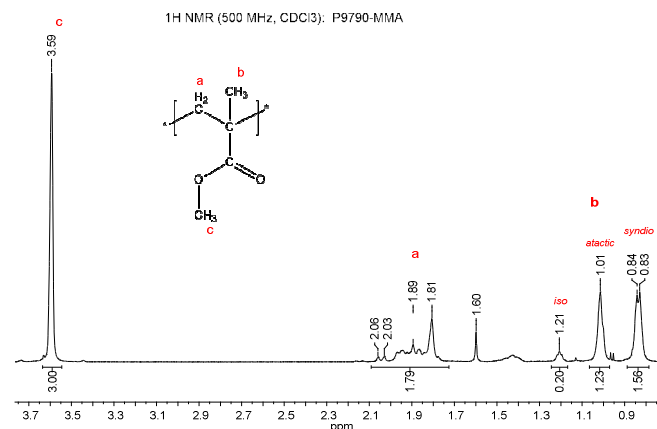
Solubility:

The polymer is soluble in THF, CHCl₃, toluene and dioxane. The polymer precipitates from cold methanol and ethanol.

T_g vs MW for selected atactic PMMA:

M _n × 10 ³	T _g (°C)	M _n × 10 ³	T _g (°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

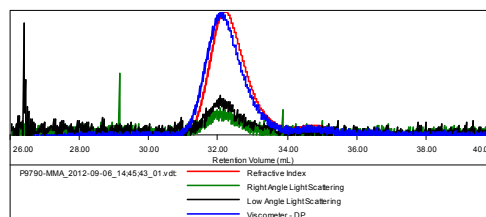
¹H NMR spectrum of PMMA:



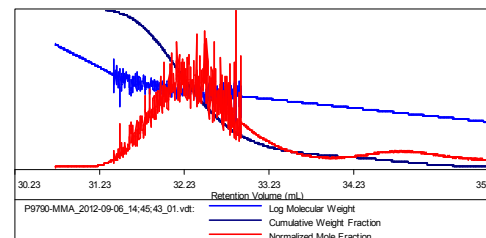
SEC elugram of PMMA homopolymer:

Sample ID: P9790-MMA

Concentration (mg/mL)	3.7887
Sample dn/dc (mL/g)	0.0840
Method File	PS80K-aug-0002.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn (Da)	Mw (Da)	Mp (Da)	Mw/Mn	IV (dL/g)
P9790-MMA_2012-09-06_14:45:43_01.vdt	24,344	28,906	27,467	1.187	0.1856



DSC:

T_g of atactic poly methyl methacrylate as function of molecular weight

