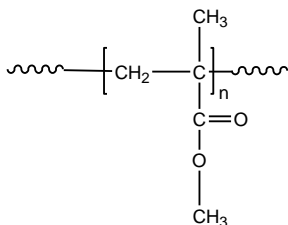


Sample Name: **Poly(methyl methacrylate)**

Different microstructure

Sample #: **P9140C-MMA**

Structure:



Composition:

Mn x 10 ³	PDI
95.0	1.25
Syndio : Hetero : Isotactic	55 : 39 : 6

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.

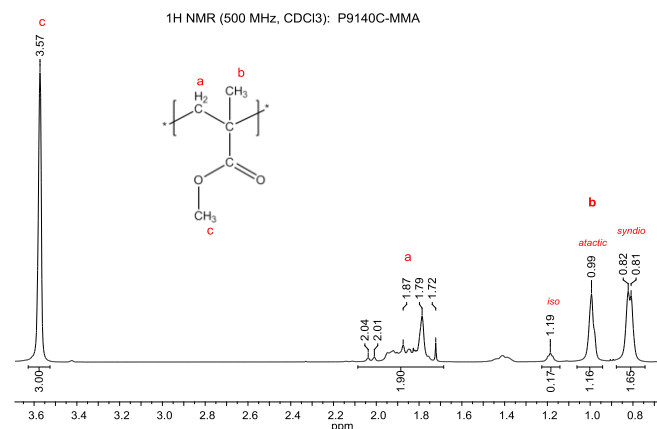
Solubility:

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:

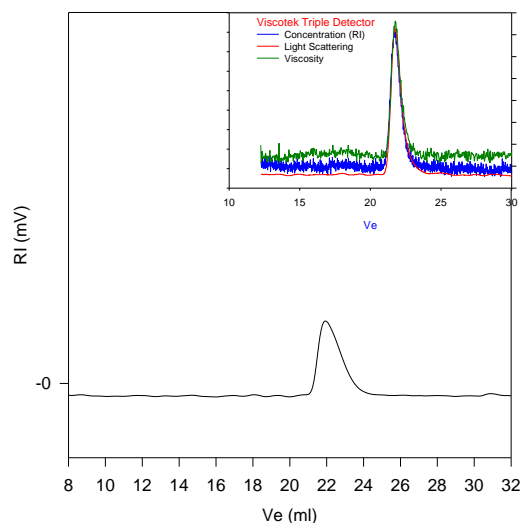
M _n × 10 ³	T _g (°C)	M _n × 10 ³	T _g (°C)
1.1	51	36	98
2.5	76	55	111
5.0	91	70	107
15	101	127	115
19	107	230	114
29	96	700	121

¹H NMR spectrum of PMMA:



SEC elugram of PMMA homopolymer:

P9140C-MMA



Size Exclusion Chromatography of poly(methyl methacrylate)-Atactic:

— M_n = 95,000, M_w = 119,000, M_w/M_n = 1.25
Solution Viscosity in THF At 35 °C: 0.506 dl/g
RgW: 12.95 nm
dn/dc in THF at 35 °C: 0.084 ml/g

DSC:

T_g of atactic poly methyl methacrylate as function of molecular weight

