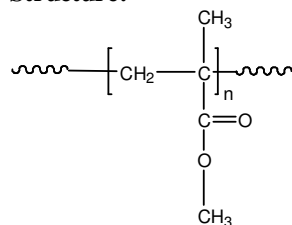


Sample Name: **Poly(methyl methacrylate)**
Different Microstructure

Sample #: **P4938-MMA**

Structure:



Composition:

$M_n \times 10^3$	PDI
105.0	1.5
Syndio:Hetero:Iso	58: 37:5

Synthesis Procedure:

Atactic poly(methyl methacrylate) is obtained by free radical polymerization.

Characterization:

The molecular weight and polydispersity index (PDI) are 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 Viscoek 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.

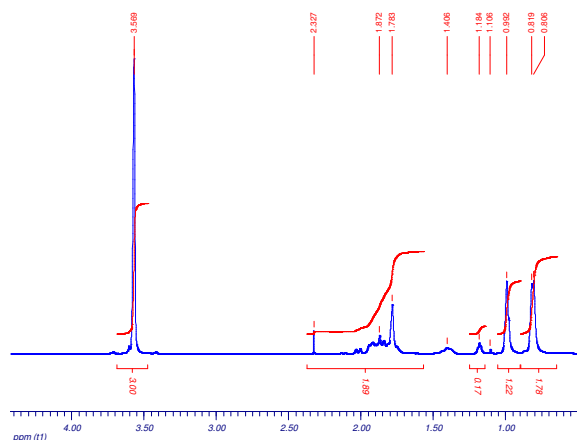
Solubility:

Poly(tert butylmethacrylate) is soluble in THF, CHCl_3 , toluene and dioxane. The polymer precipitates from cold methanol and ethanol.

T_g vs MW for selected atactic poly methyl methacrylate

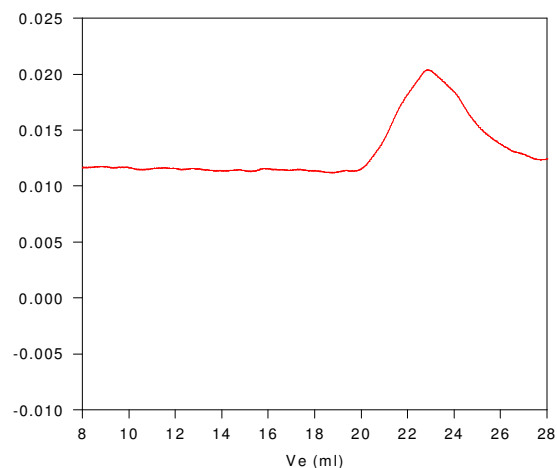
$M_n \times 10^3$	T_g (°C)	$M_n \times 10^3$	T_g (°C)
1.1	51	36	98
2.5	76	55	111
5.0	91	70	107
15	101	127	115
19	107	230	114
29	96	700	121

NMR of the Homopolymer:



SEC of the Homopolymer:

P4938-MMA



Size exclusion chromatograph of polymethylmethacrylate-rich in atactic

$M_n = 105000$, $M_w = 159000$, $PI = 1.5$

Solution Viscosity in THF at 35 °C: 0.50 dl/g

Radius of Gyration in THF at 35 °C: 13.10 nm

dn/dc in THF at 35 °C: 0.84 ml/g

T_g of atactic poly methyl methacrylate as function of molecular weight

