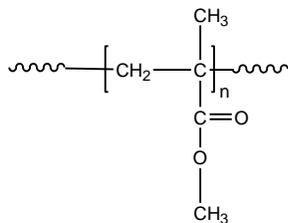


Sample Name: Poly(methyl methacrylate)
Different microstructure

Sample #: P4942-MMA

Structure:



Composition:

$M_n \times 10^3$	PDI
24.0	1.4
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.

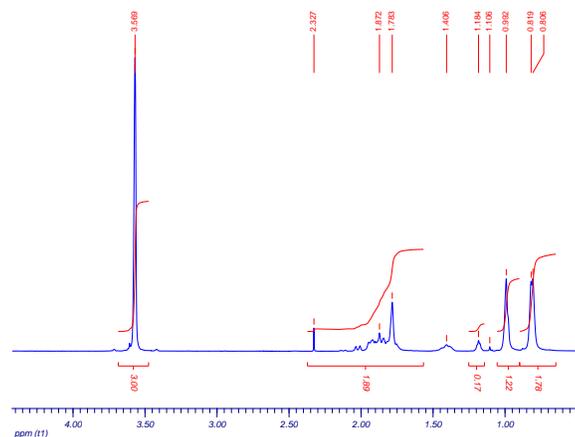
Solubility:

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

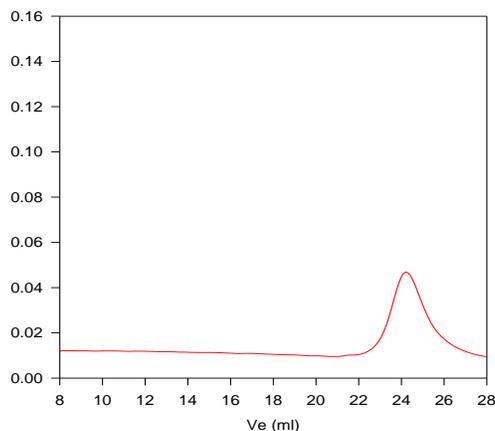
$M_n \times 10^3$	T_g (°C)	$M_n \times 10^3$	T_g (°C)
1.1	51	36	98
2.5	76	55	111
5.0	91	70	107
15	101	127	115
19	107	230	114
29	96	700	121

NMR of the Homopolymer:



SEC of the Homopolymer:

P4942-MMA



Size exclusion chromatograph of polymethylmethacrylate-rich in atactic $M_n=24000$, $M_w=35000$, $PI=1.4$
 Solution Viscosity in THF at 35 °C: 0.229dl/g
 Radius of Gyration in THF at 35 °C: 6.42 nm
 dn/dc in THF at 35°C: 0.084ml/g

T_g of atactic poly methyl methacrylate as function of molecular weight

