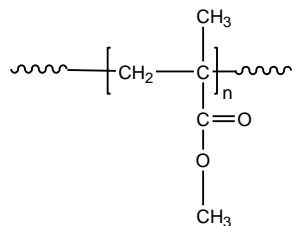


Sample Name: **Poly(methyl methacrylate)**
Different Microstructure

Sample #: **P7622I-MMA**

Structure:



Composition:

$M_n \times 10^3$	PDI
40.0	1.4
Syndio: Hetero:Iso	58: 37:5

Synthesis Procedure:

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

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 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:

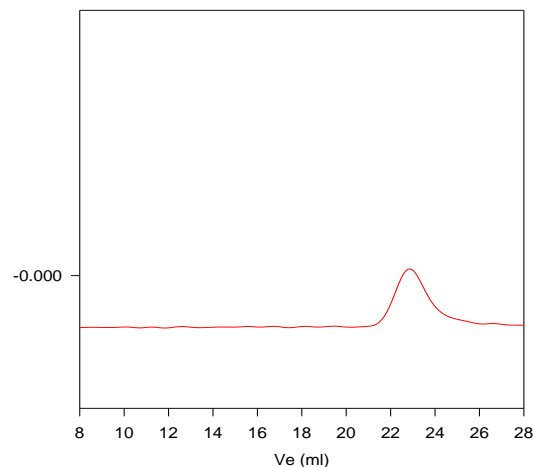
Poly(tert butylmethacrylate) is soluble in THF, CHCl_3 , toluene and dioxane. The polymer precipitates from cold methanol and ethanol.

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

SEC of the Homopolymer:

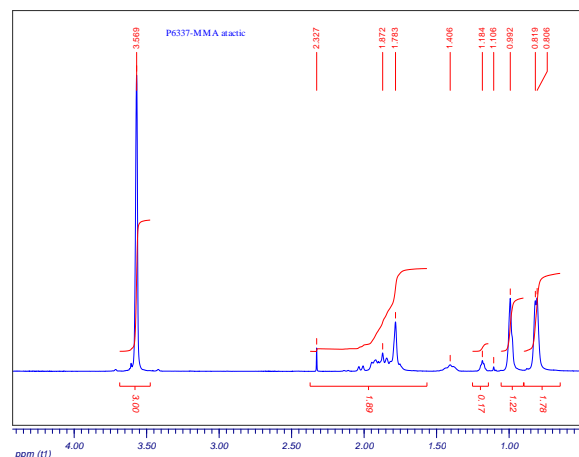
P7622I-MMA



Size exclusion chromatograph of atactic poly(methyl methacrylate):

$M_n=40000$, $M_w=56000$ PI=1.4

NMR of the Homopolymer:



T_g of atactic poly methyl methacrylate as function of molecular weight

