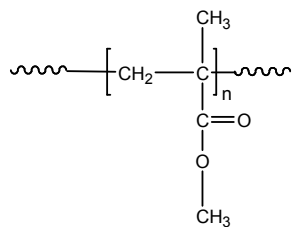


Sample Name: Poly(methyl methacrylate)

*Syndiotactic rich*

Sample #: P10051-MMA

**Structure:**

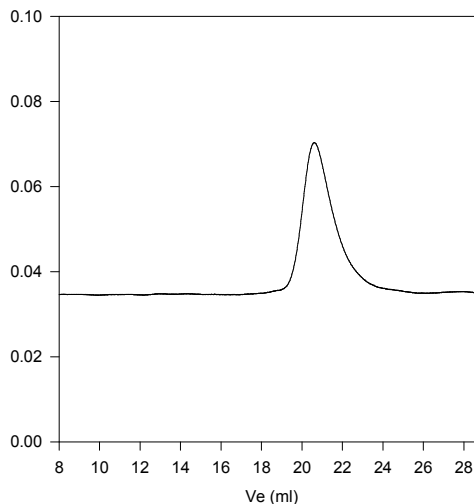


**Composition:**

Mn x 10 <sup>3</sup>	PDI
145.0	1.4

**SEC of the Homopolymer:**

**P10051-MMA**



Size exclusion chromatograph of polymethylmethacrylate-rich in atactic:  
M<sub>n</sub>=145,000, M<sub>w</sub>=203,000, PI=1.4

**Synthesis Procedure:**

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

**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<sub>g</sub>) of the sample has been considered.

**Solubility:**

Poly(tert butylmethacrylate) is soluble in THF, CHCl<sub>3</sub>, toluene and dioxane. The polymer precipitates from cold methanol and ethanol.

**T<sub>g</sub> vs MW for selected atactic poly methyl methacrylate**

M <sub>n</sub> × 10 <sup>3</sup>	T <sub>g</sub> (°C)	M <sub>n</sub> × 10 <sup>3</sup>	T <sub>g</sub> (°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

**T<sub>g</sub> of atactic poly methyl methacrylate as function of molecular weight**

