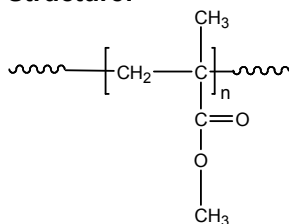


Sample Name: Poly (methyl methacrylate)

Different microstructure

Sample #: P19327C-MMA

Structure:



Composition:

$M_n \times 10^3$	PDI
138.0	1.3
Syndio : Hetero : Isotactic	60:35:5

Synthesis Procedure:

Poly (methyl methacrylate) is obtained by RAFT process.

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 $10^\circ\text{C}/\text{min}$. The inflection glass transition temperature (T_g) of the sample has been considered.

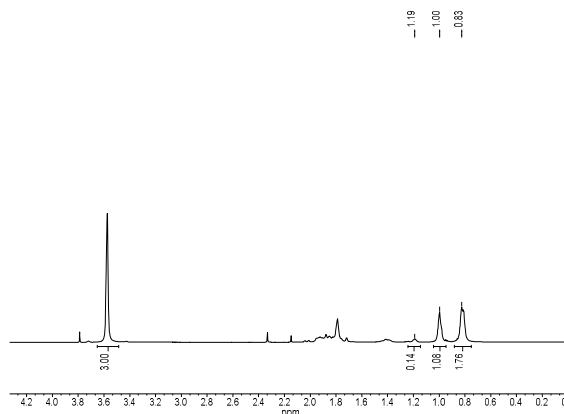
Solubility:

The polymer is soluble in THF, CHCl_3 , toluene and dioxane. The polymer precipitates from cold methanol and ethanol.

T_g vs MW for selected atactic PMMA:

$M_n \times 10^3$	$T_g (^\circ\text{C})$	$M_n \times 10^3$	$T_g (^\circ\text{C})$
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

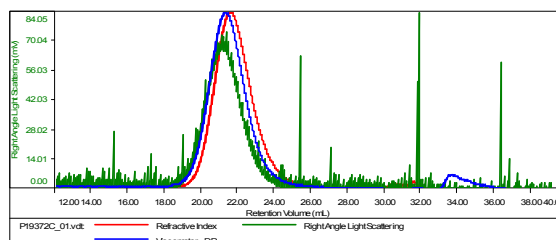
^1H NMR spectrum of PMMA:



SEC elugram of PMMA homopolymer:

Sample ID: P19327C-MMA

Concentration (mg/mL)	4.9095
Sample chx/c: (mL/g)	0.0850
Method File	PS80K-June26-2015-0001.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
P19327C_01.vcl	138,004	182,247	166,514	1.321	0.7280

DSC:

T_g of atactic poly methyl methacrylate as function of molecular weight

