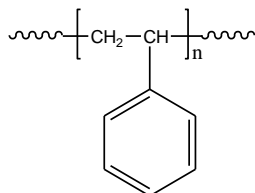


Sample Name: Polystyrene

Sample #: P1099A-S

Structure:

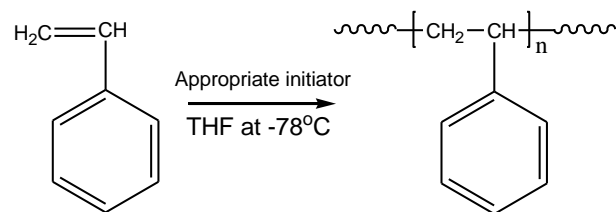


Composition:

Mn x 10 ³	PDI
475.5	1.90

Synthesis Procedure:

Polystyrene is obtained by living anionic polymerization of styrene as illustrated below:



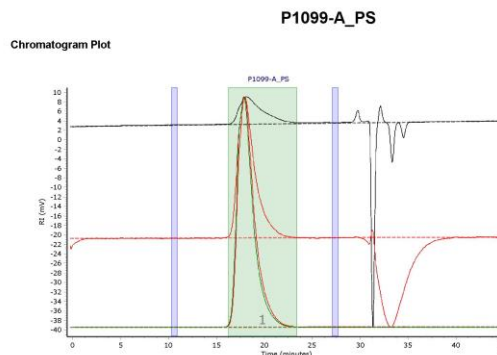
Characterization:

The molecular weight was calculated from ¹H NMR and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Malvern liquid chromatography equipped with refractive and light scattering detectors. Thermal analysis of the samples was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min.

Solubility:

Polystyrene is soluble in DMF, THF, toluene and CHCl₃. It precipitates from methanol, ethanol, water and hexanes.

SEC elugram of the homopolymer:



Molecular Weight Averages							
Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	1167360	475550	904399	1277021	1557566	1230603	1.902

Processing Parameters

Method	RI	Last modified by Polymer Source at 9:49:15 AM on July-13-18
Concentration Detector Used in Analysis	RI	
Injection volume (μL)	100.00	
Flow rate (mL/min)	1.00	
Concentration options	Calculate Sample Concentration from Entered Sample Properties	
Entered dn/dc (mL/g)	0.185	
Entered Ext Coeff ((mg/mL)·cm ⁻¹)	1.000	
Calculated RI concentration (mg/mL)	0.903	
MW calculation method	Use all angles	
Log Mi-v-RT curve fit options	Set the fit limits using the limits at peak width of 10 %	
Polynomial curve fit order	1	
Use Constant Inlet Pressure	No	
Flory-Fox	2.86e+021	
DP Multiplier (mV to Pa)	1.0000	
IP Multiplier (mV to kPa)	1.0000	
Use IV To Calculate Rg	No	

DSC thermogram of Polystyrene:

