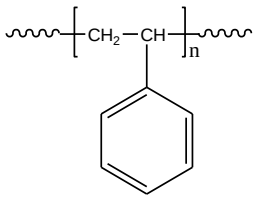
Sample Name: **Polystyrene**

Sample #: **P1099J-S**

Structure:

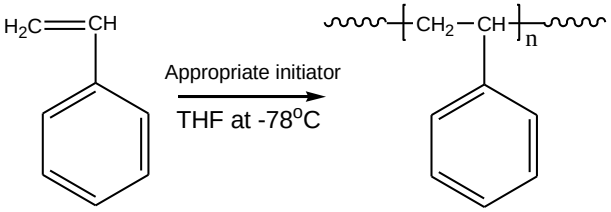


Composition:

Mn x 10^3	PDI
2601.0	1.30

Synthesis Procedure:

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



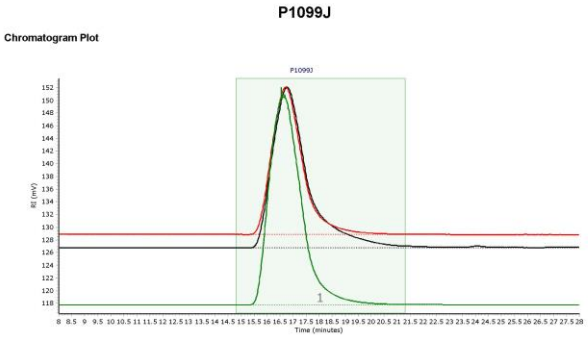
Characterization:

The molecular weight was calculated from ^{1}H NMR and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Malven 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 $CHCl_3$. 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	3723855	2601292	3369774	3863624	4222124	3808322	1.295

Processing Parameters

Method	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-*])	1.000
Calculated RI concentration (mg/mL)	2.260
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 thermogarm of Polystyrene: