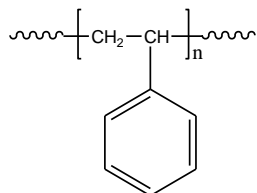


Sample Name: Polystyrene

Sample #: P8069-S

Structure:

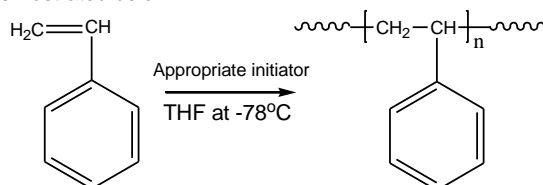


Composition:

| Mn x 10 ³ | PDI |
|----------------------|------|
| 76.0 | 1.06 |

Synthesis Procedure:

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



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:

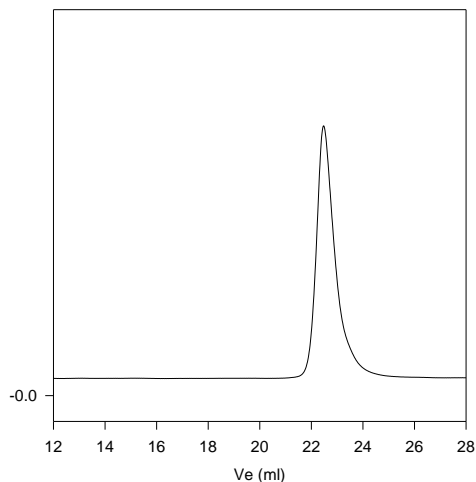
Thermal analysis of the sample was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T_g) has been considered.

Solubility:

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

SEC of Homopolymer:

P8069-S



Size exclusion chromatograph of polystyrene:

M_n=76000 M_w=80500, PI=1.05

Light scattering data: solution Intrinsic Viscosity in THF at 30 °C: 0.519 dl/g
Radius of Gyration: 11.15 nm

T_g of polystyrene as function of molecular weight

