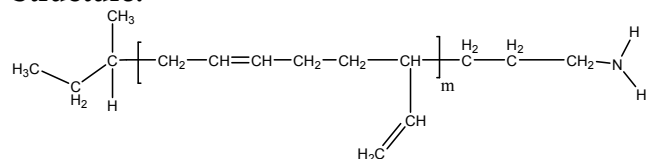


Sample Name: Amino Terminated Polybutadiene, 1, 2- rich microstructure

Sample #: P18006-BdNH2

Structure:

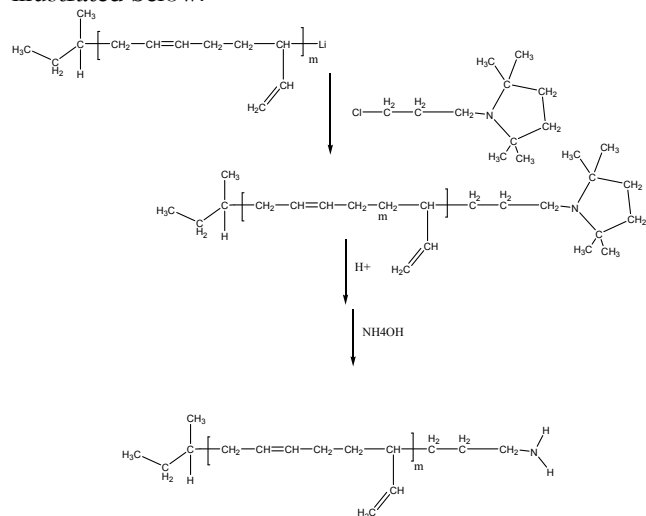


Composition:

Mn x 10 ³	PDI
3.5	1.13
Functionality	>98%
T _g	-31°C

Synthesis Procedure:

Amino terminated polybutadiene (1,2 addition) was prepared by anionic living polymerization of butadiene in polar solvent such as THF initiated by Sec. BuLi initiator followed by termination with 2,2,5,5-tetramethyl-1-(3-chloropropyl)-1-aza-2,5-disilacyclopentane. The deprotection eprotection of NH2 functional group in acidic conditions followed by neutralization with base to get free Amino end terminated polymer. The scheme of the reaction is 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.

Functionality: The functionality of polymer was determined by the titration with HClO₄ using crystal violet as the indicator

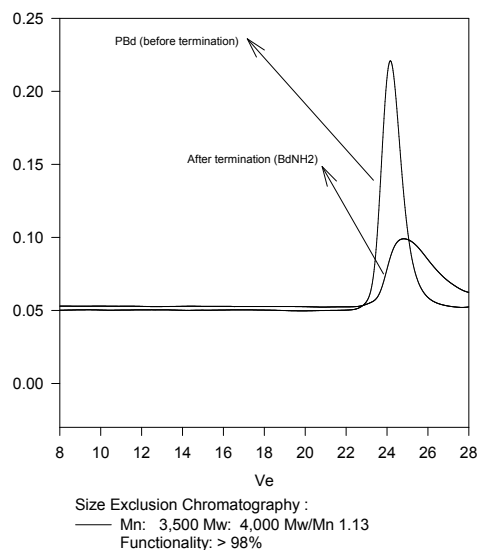
Thermal Analysis:

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_g) of the sample has been considered.

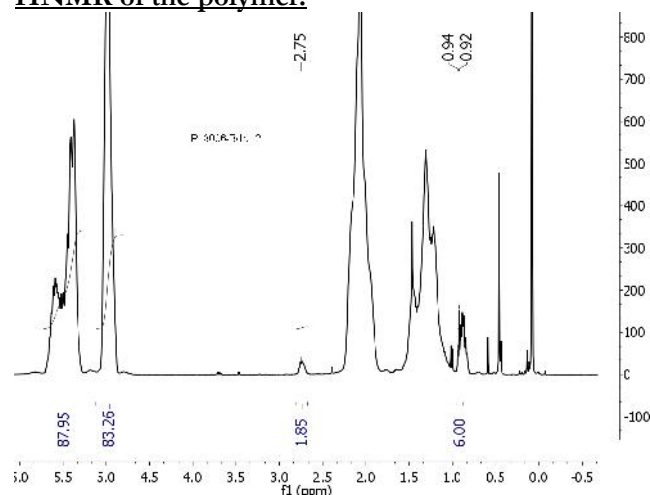
Solubility: Amino terminated polybutadiene is soluble in THF, toluene, hexane, cyclohexane and CHCl₃. It precipitates from cold methanol, ethanol.

SEC of the Polymer

P18006-BdNH2 (1, 2 addition)



HNMR of the polymer:



DSC thermogram for the sample:

