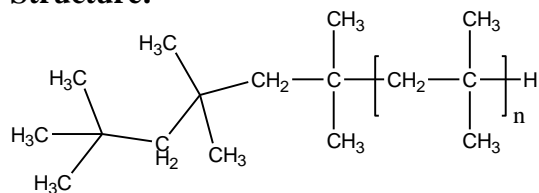


**Sample Name: Polyisobutylene**

**Sample #: P8900-1b**

**Structure:**

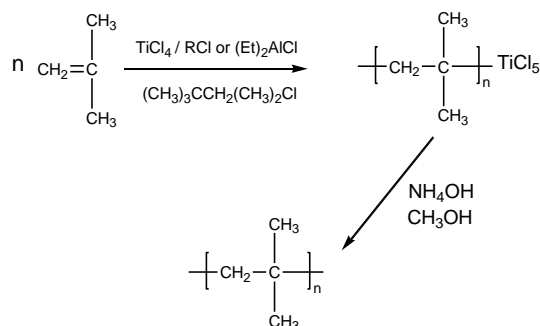


**Composition:**

Mn x 10 <sup>3</sup>	PDI
84.0	1.2

**Synthesis Procedure:**

Polyisobutylene is synthesized by living cationic polymerization of isobutylene in hexane at  $-78^{\circ}\text{C}$  using a tin based catalyst and a 2,4,4-dimethyl pentene / HCl initiator. The reaction scheme is shown below:



**Purification:**

After polymerization the catalyst residues are removed by filtration and washing with acidic water after which the pH is returned to nominal values and finally the polymer is freeze dried.

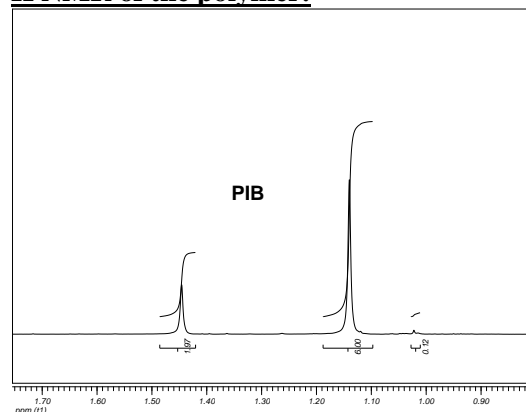
**Characterization:**

The molecular weight and polydispersity index (PDI) of polyisobutylene are obtained by size exclusion chromatography.

**Solubility:**

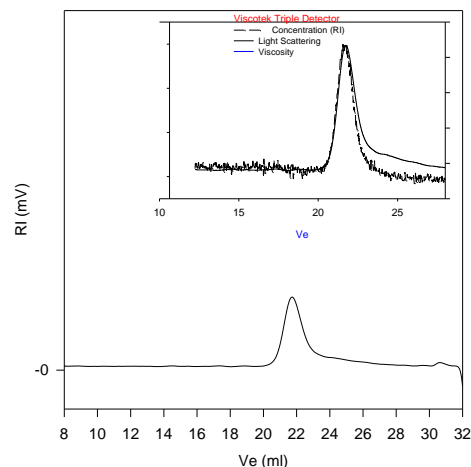
Polyisobutylene is soluble in THF, toluene, hexane, pentane and cyclohexane and precipitates from methanol and ethanol.

**H NMR of the polymer:**



**SEC of Homopolymer:**

**P8900-1B**



Size Exclusion Chromatography of polymer:

—  $M_n = 84000$ ,  $M_w = 108000$ ,  $M_w/M_n = 1.2$   
Solution Viscosity in THF at  $35^{\circ}\text{C}$ : 0.564 dl/g  
R<sub>gw</sub>: 13.07 m  
dn/dc in THF at  $35^{\circ}\text{C}$ : 0.112 ml/g