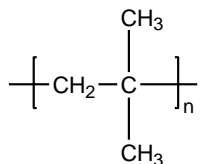


Sample Name: Polyisobutylene

Sample #: P1873-1b

**Structure:**

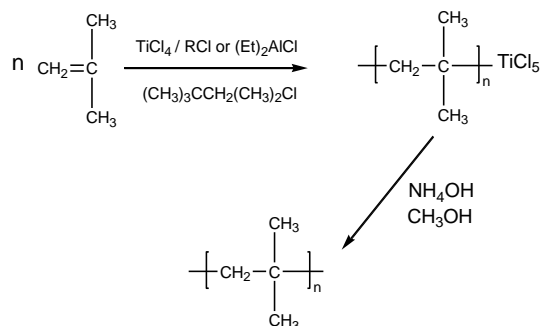


**Composition:**

Mn x 10 <sup>3</sup>	PDI
6.9	1.12

**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.

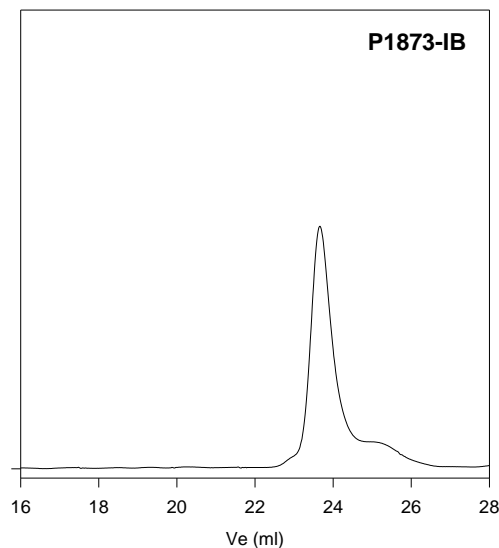
**Characterization:**

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.

**SEC of Homopolymer:**



Size Exclusion Chromatogram of Polyisobutylene:

$M_n=6900$ ,  $M_w=7700$ ,  $M_w/M_n = 1.12$