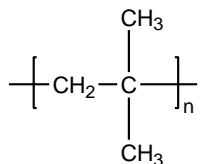


Sample Name: Polyisobutylene

Sample #: P4199-1b

**Structure:**

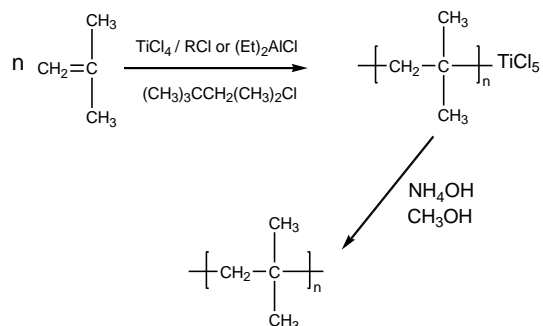


**Composition:**

$M_n \times 10^3$	PDI
57.0	1.80

**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.

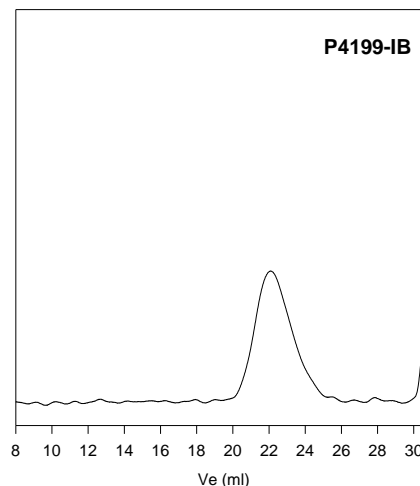
**Characterization:**

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:

$M_n=57000$ ,  $M_w=102000$ ,  $M_w/M_n = 1.8$