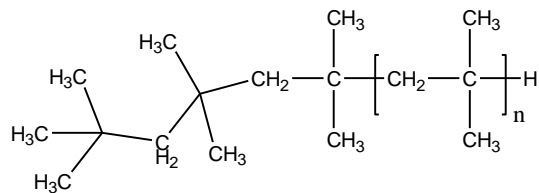


Sample Name: Polyisobutylene

Sample #: P8106-1b

**Structure:**

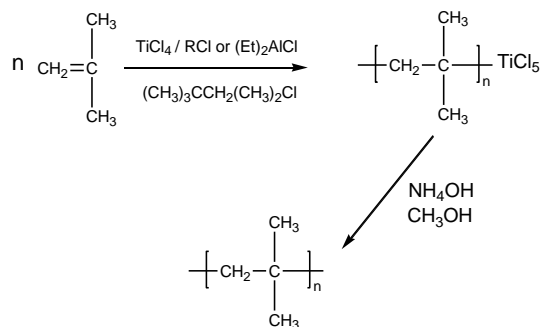


**Composition:**

$M_n \times 10^3$	PDI
7.0( $^1\text{H}$ NMR)	1.30

**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.

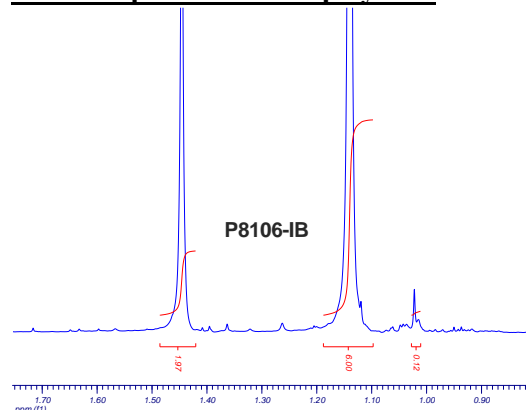
**Characterization:**

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

**Solubility:**

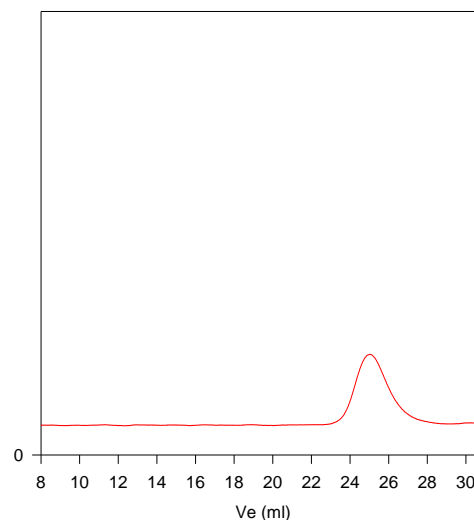
Polyisobutylene is soluble in THF, toluene, hexane, pentane and cyclohexane and precipitates from methanol and ethanol.

**H NMR spectrum of the polymer:**



**SEC of Homopolymer:**

P8106-IB



Size Exclusion Chromatogram of Polyisobutylene:

$M_n=6000$ ,  $M_w=7800$ ,  $M_w/M_n=1.30$   
( $M_n$  from HNMR 7000 and by SEC 6000)