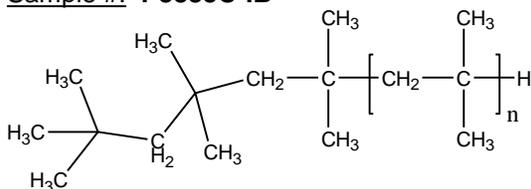


## Sample Name: Polyisobutylene

Sample #: P8883C-IB

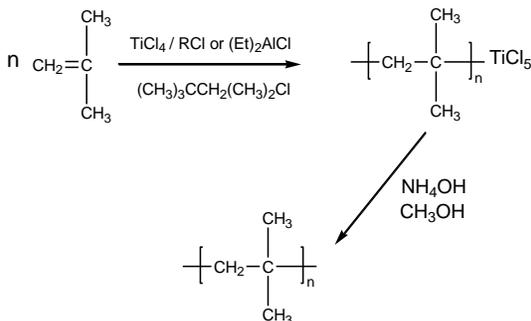


### Composition:

$M_n \times 10^3$	PDI
41.0	1.5

### 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:

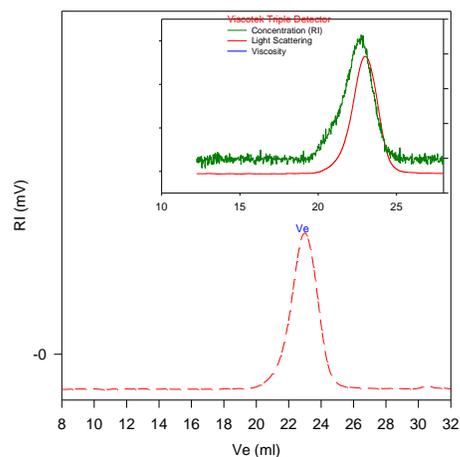
The molecular weight and polydispersity index (PDI) of polyisobutylene are obtained by size exclusion chromatography.

### Solubility:

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

### SEC of Homopolymer:

P8883C-IB



Size Exclusion Chromatography of polymer:

---  $M_n = 41000$ ,  $M_w = 62000$ ,  $M_w/M_n = 1.5$   
Solution Viscosity in THF at  $35^\circ\text{C}$ : 0.400dl/g  
Rgw: 9.06 nm  
 $dn/dc$  in THF at  $35^\circ\text{C}$ : 0.112 ml/g

### H NMR of the polymer:

