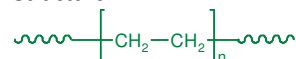


**Sample Name:** Polyethylene  
(obtained from the hydrogenation of Polybutadiene rich in 1,4 microstructure)

**Sample #:** P1750-E

**Structure:**

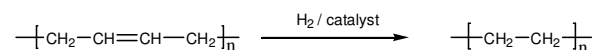
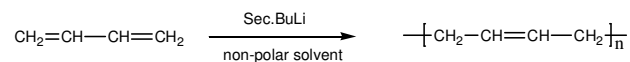


**Composition:**

Mn x 10 <sup>3</sup>	PDI
92.0	1.4

#### Synthesis Procedure:

Polyethylene is made from the hydrogenation of 1,4-polybutadiene. 1,4-polybutadiene is synthesized by living anionic polymerization of butadiene in non-polar solvent.



#### Characterization:

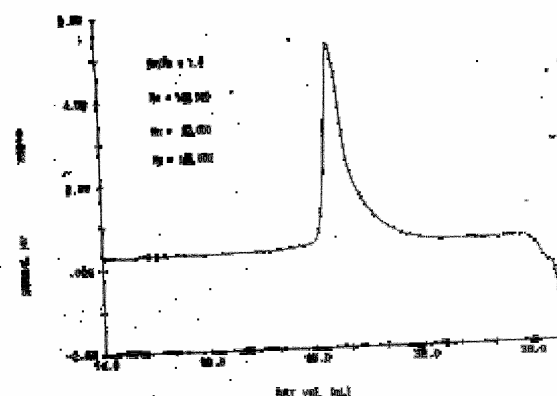
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. The SEC instrument calibrated with poly butadiene standards. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co.

The hydrogenation of polybutadiene is confirmed by FT-IR with disappearance of the alkene double bond.

#### Solubility:

Polyethylene is soluble in hot toluene and hot xylene. The polymer is insoluble in hexane, methanol and ethers.

#### SEC of the Polymer: Precursor



High Temperature Profile for the polyethylene sample # P1750-E  
Mn: 92000 Mw: 128000 Mw/Mn 1.4