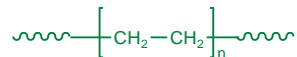


**Sample Name:** Polyethylene  
(Obtained from the hydrogenation of Polybutadiene rich in 1,4 microstructure)

**Sample #:** P19421-E

**Structure:**

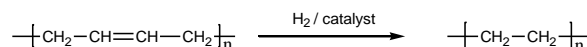
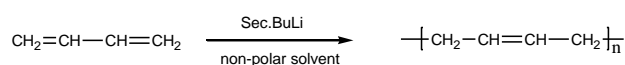


**Composition:**

Mn x 10 <sup>3</sup>	PDI
210.0	1.07

**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 polybutadiene 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.

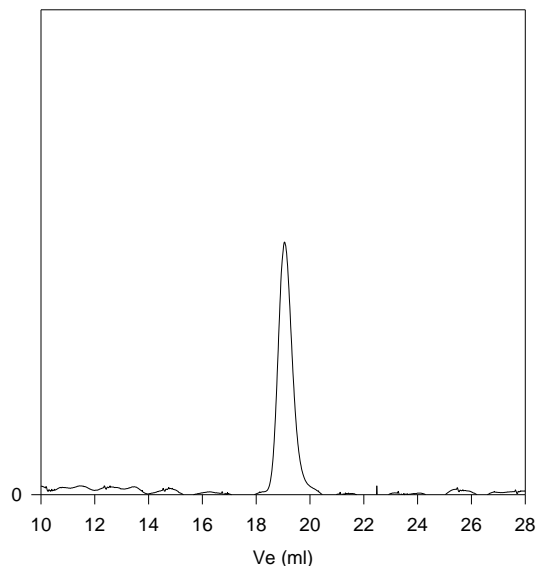
The hydrogenation of polybutadiene is confirmed by FT-IR with disappearance of the alkene double bond.

**Solubility:**

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

**SEC of the Polymer: Precursor**

**P19421-Bd for P19421-E**



Size exclusion chromatography of polybutadiene with respect to polybutadiene standards:

M<sub>n</sub>=206500, M<sub>w</sub>=221000, M<sub>w</sub>/M<sub>n</sub>=1.07