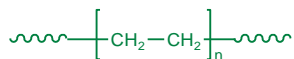


Sample Name: Polyethylene
 (Obtained from the hydrogenation of Poly
 butadiene rich in 1,4 microstructure)
Sample #: P1572-E

Structure:

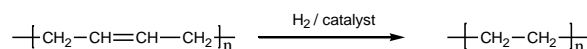
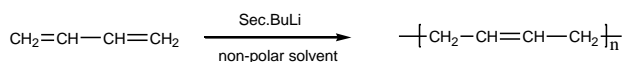


Composition:

Mn x 10 ³	PDI
114.0	1.10

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.

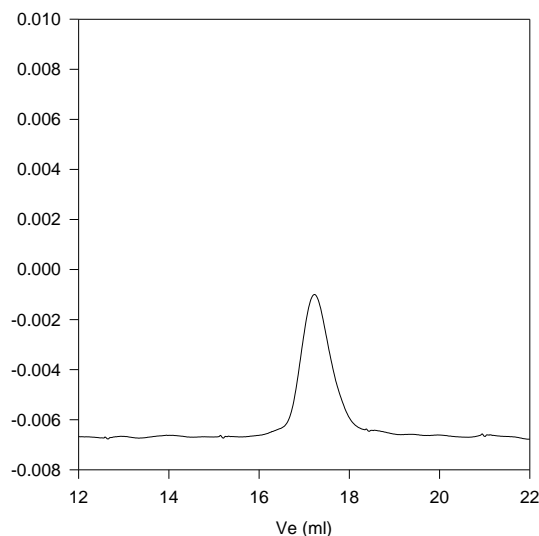
The hydrogenation of polybutadiene is confirmed by FT-IR with disappearance of the alkene double bond.

Solubility:

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

SEC of the Polymer: Precursor

P1445-Bd (Precursor for P1572-E)



Size exclusion chromatography of polybutadiene:

M_n=110,000, M_w=121,000 PDI=1.10

PE after Hydrogenation : Mn 114,000