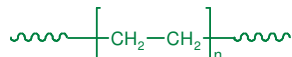


Sample Name: Polyethylene
(obtained from the hydrogenation of Polybutadiene rich in 1,4 microstructure)

Sample #: P1965-E

Structure:

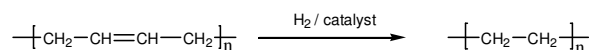
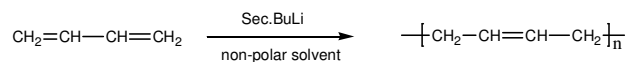


Composition:

Mn x 10 ³	PDI
22.5	1.05

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:

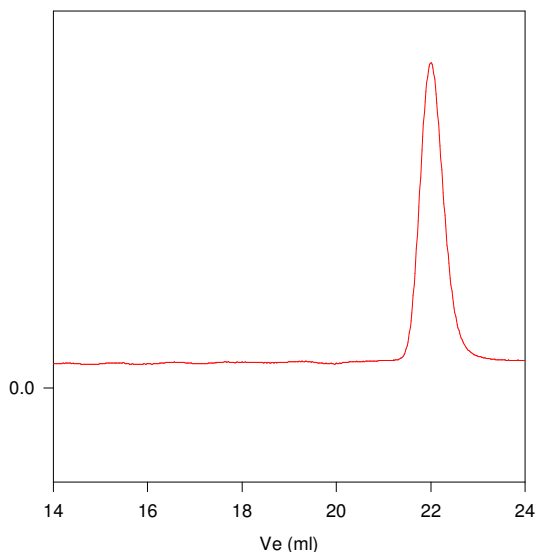
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. The SEC instrument calibrated with poly butadiene standards. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC 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
PBd-precursor for P1965-E



Size exclusion chromatography of polybutadiene with respect to polybutadiene standards (precursor for P1965-E):
M_n=21700, M_w=22600, M_w/M_n=1.05
Molecular weight of Polyethylene Mn: 22500 Mw/Mn:1.05