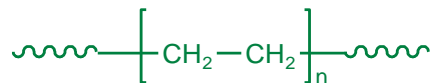


Sample Name: Polyethylene
(Obtained from the hydrogenation of Poly butadiene rich in 1, 4 microstructure)

Sample #: P1739-E

Structure:

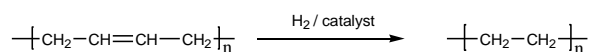
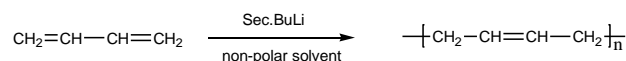


Composition:

Mn x 10 ³	PDI
10.4	1.04

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.

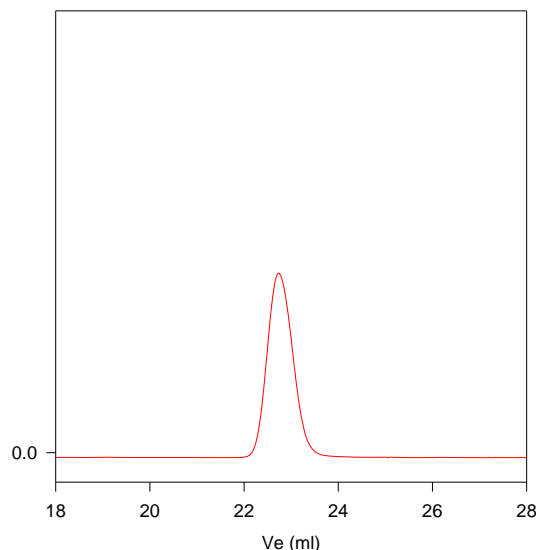
The hydrogenation of polybutadiene is confirmed by FT-IR with disappearance of the alkene double bond.

Solubility:

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

SEC of the Polymer: Precursor

P1739-Bd precursor for P1739E



Size exclusion chromatography of polybutadiene:

M_n=10000, M_w=10400, PI=1.04

Polyethylene : MN 10,400 Mw/Mn 1.04