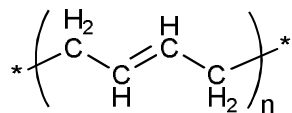


Sample Name:

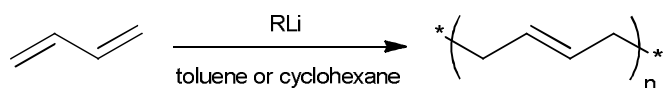
Polybutadiene (predominantly 1,4-addition)

Sample #: P4147-Bd**Structure:****Composition:**

$M_n \times 10^3$ (g/mol)	M_w/M_n
1.0	1.10

Synthesis Procedure:

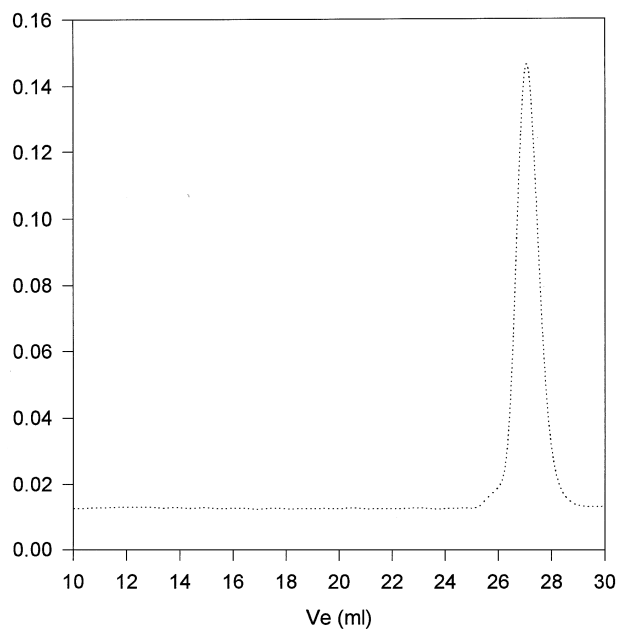
Polybutadiene (predominantly 1,4-addition) is obtained by living anionic polymerization in toluene or cyclohexane. The reaction scheme is shown below:

**Characterization:**

1,4-Addition of polybutadiene can be confirmed by $^1\text{H-NMR}$. The molecular weight and polydispersity index (M_w/M_n) were obtained by size exclusion chromatography (SEC) in THF. 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.

Solubility:

Polybutadiene is soluble in THF, toluene, hexane, pentane, cyclohexane; and precipitates from methanol, ethanol.

SEC elugram:**P4147-Bd(1,4 addition)**

Size exclusion chromatography of polybutadiene with respect to polybutadiene standards:

$M_n=1000$, $M_w=1100$, $M_w/M_n=1.10$