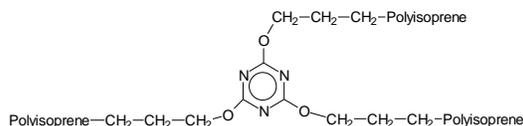


Sample Name:  
**Three arm Poly isoprene**

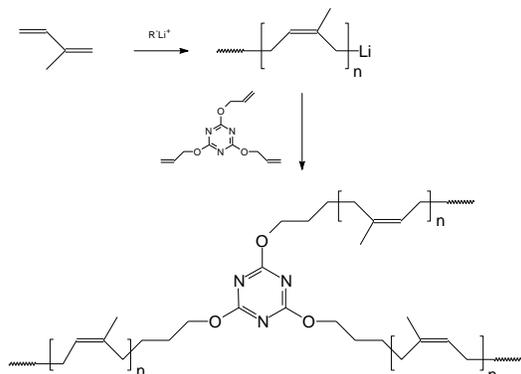
Sample #: **P883-3Ip**

Mn x 10 <sup>3</sup> Total (Branch)	PDI
267.0 (89.0)	1.04

**Chemical Structure:**



The arm-polymer was prepared by anionic living polymerization of styrene in non-polar solvent, then the star polymer was obtained by coupling reaction with 2,4,6-triallyloxy-1,3,5-triazine (TT). The scheme of the reaction is illustrated below:

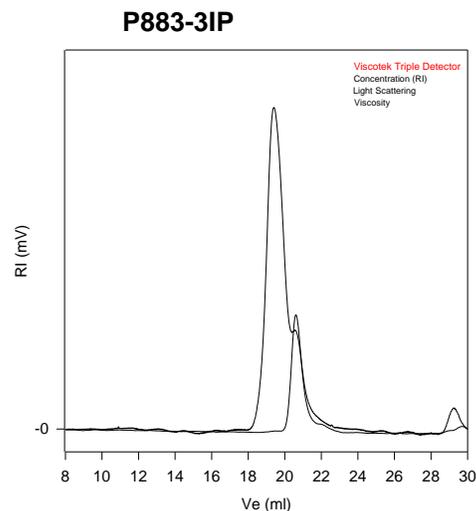


**Fractionation.** The obtained polymer was dissolved in benzene at 30°C. Methanol was added until the solution became cloudy. The solution was then warmed at 50°C to turn clear. By keeping the solution back at 30°C for several hours, phase separation occurred. The lower phase was isolated. This process was repeated for more than six times to remove uncoupled polyisoprene and two-arm fractions.

**Characterization.**

**Molecular Weight:** Size exclusion chromatography (SEC): Varian liquid chromatograph equipped with UV and refractive detector. SEC columns from Supelco were used with THF as the eluent. The columns were calibrated with monodisperse polystyrene. The molecular weights and the polydispersity indice of side-arm were calculated. The absolute

molecular weight of star-like polymer was determined by light scattering detector.



Size Exclusion Chromatography of Poly isoprene OH terminated

— M<sub>n</sub> = 89,000, M<sub>w</sub> = 93,500, M<sub>w</sub>/M<sub>n</sub> = 1.04  
 data from light scattering detector:  
 Solution Viscosity in THF at 35 °C: 0.853 dl/g  
 dn/dc in THF at 35 °C: 0.125 ml/g  
 Radius of Gyration: 12.71 nm  
 After Linking reaction: Mn : 267,000 unlinked fraction < 7%