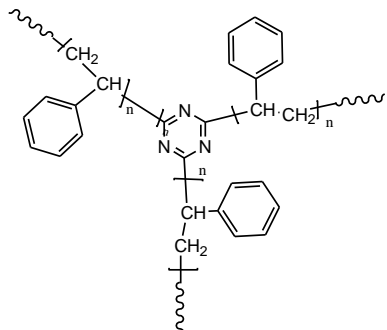


Sample Name: **Three arm Poly styrene**

Sample#: **P5382-3S**

Structure:

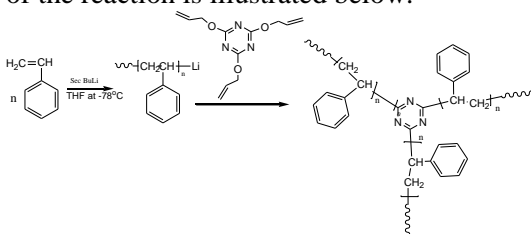


Composition:

Mw x 10³ by Light scattering (total)	PDI
2,300.0	1.08
Solution Viscosity in THF at 35 °C: 4.446dl/g	
Unlinked fraction < 3%	

Synthesis Procedure:

Three arm-polymer was prepared by anionic living polymerization of styrene in non-polar solvent, and 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:



Scheme 1.

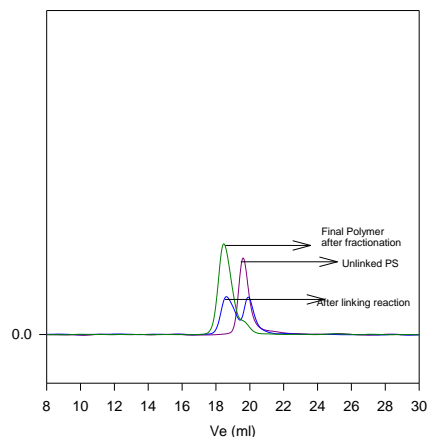
Characterization:

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 the side-arm were calculated. The absolute molecular weight of the star-like polymer was determined by light scattering detector.

SEC of the Polymer:

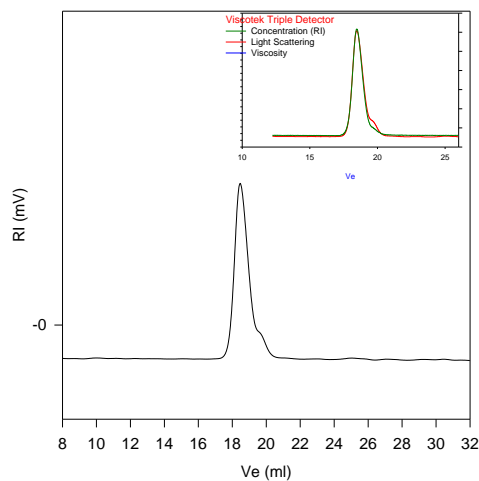
P5382-3S



Size Exclusion Chromatogram of polymer :

1. Single arm before linking reaction: $M_n = 766,000$, $M_w/M_n = 1.09$
2. After linking reaction : Crude polymer
3. Final Product after fractionation: This might still contain < 3-4% unlinked polystyrene: $M_n = 2,300,000$, $M_w/M_n = 1.08$

P5382-3S



Size Exclusion Chromatography of Three arm Polystyrene
Light Scattering data:

- $M_w = 2,300,000$, $M_w/M_n = 1.08$
- Solution Viscosity in THF at 35 °C: 4.436dl/g
- dn/dc in THF at 35 °C: 0.185 ml/g
- R_{gw}: 71.27nm