

# Product Profile

## Identification

**Product Name:** Poly(styrene-b-4-vinyl-pyridine)

**Product Lot Number:** P11020-R-S4VP

**CAS #:** 26222-40-2

**Product Chemical Architecture:**



**Composition:**

Composition (S-b-4VP)	3,000-b-3,000
4VP mole%	49.6
Mn (g/mole)	6,000
Mw (g/mole)	7,000
Mw/Mn	1.10
dn/dc (mL/g) in DMF at 35 °C	0.159

## Method of Synthesis

The polymer is synthesized by anionic polymerization process.

**Solubility in different solvents:**

THF	Depends on composition	DMF	✓
Alcohol	Depends on composition	CHCl <sub>3</sub>	✓
Toluene <sub>(hot)</sub>	X	Water	X

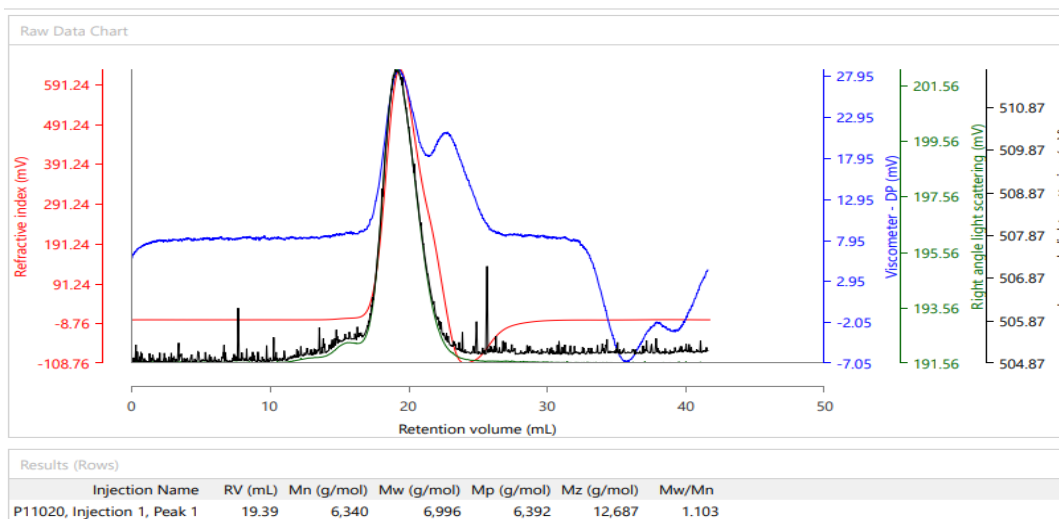
## Validation of Architecture

### A. Gel Permeation Chromatography (GPC), SEC Profile:

Molecular weights were determined by Malvern OmniSec Reveal & Resolve GPC/SEC System equipped with Triple detector (RI, Viscometer, RALS 90° and LALS 7°) and two columns (PSS, SDV, 8x300 mm). DMF with 0.023M LiBr was the eluent. The flow rate was 0.7 ml/min.

Polymer Source

Malvern Panalytical



Chemical structure of the copolymer is shown above the spectrum. The structure consists of a backbone of  $\text{CH}_2$  groups connected to various side groups. The side groups include a vinyl group ( $\text{CH}_2=\text{CH}$ ), a phenyl group ( $\text{C}_6\text{H}_5$ ), and a quaternary carbon atom bonded to two methyl groups ( $\text{CH}_3$ ) and a phenyl group. The structure is labeled with  $n$  and  $m$  to indicate the number of repeating units.