

# Product Profile

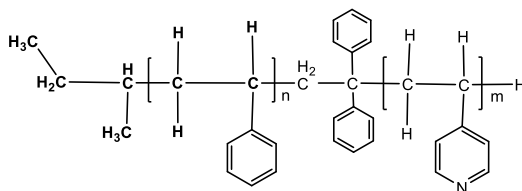
## Identification

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

**Product Lot Number:** P11227-R-S4VP

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

**Product Chemical Architecture:**



**Composition:**

Composition (S-b-4VP)	61,000-b-32,000
4VP mole%	34.5
Mn (g/mole)	92,500
Mw (g/mole)	95,000
Mw/Mn	1.03
dn/dc (mL/g) in DMF at 35 °C	0.161

## Method of Synthesis

The polymer is synthesized by anionic polymerization process.

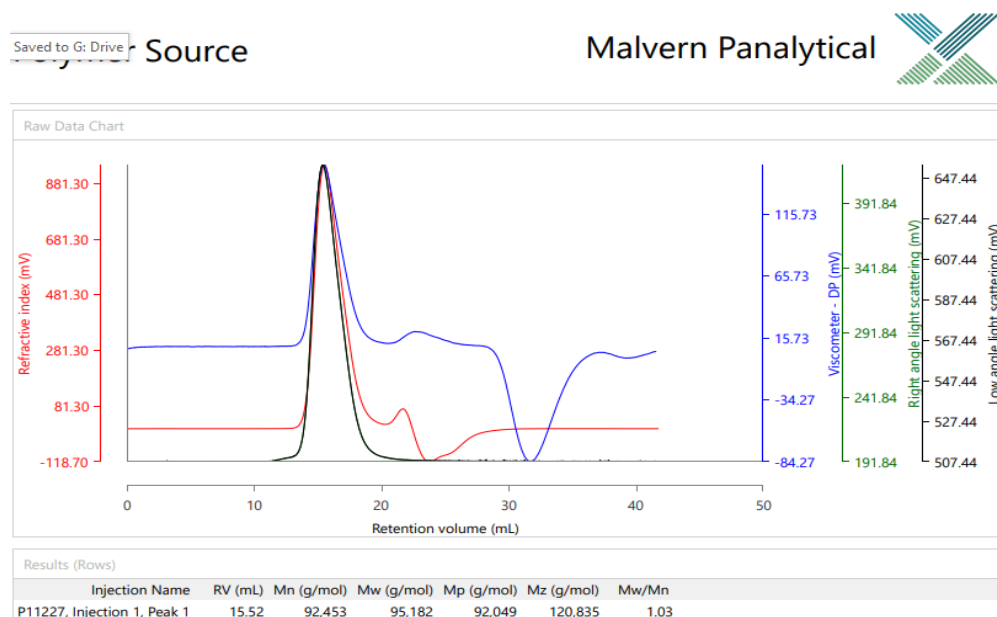
**Solubility in different solvents:**

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.



Chemical structure of P11227-S4VP (poly(1,1-diphenyl-1-propyne-co-4-vinylpyridine)) is shown above the spectrum. The structure consists of a backbone of  $[-CH_2-CH(C_6H_5)-CH_2-CH(C_6H_5)-]_n$  and  $[-CH_2-CH(C_6H_5)-CH_2-CH(C_6H_5)-]_m$  units, where  $n$  and  $m$  are the number of repeating units. The spectrum shows two main peaks: a broad peak at approximately 1.6 ppm (integration 11.49) and a sharp peak at approximately 3.2 ppm (integration 2.00). The x-axis is labeled  $f1$  (ppm) and ranges from 4.8 to 0.2. The y-axis represents intensity, ranging from -200 to 1300.