

# Product Profile

## Identification

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

**Product Lot Number:** P11234A-R-S4VP

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

**Product Chemical Architecture:**



**Composition:**

Composition (S-b-4VP)	61,000-b-19,000
4VP mole%	23.3
Mn (g/mole)	80,000
Mw (g/mole)	82,000
Mw/Mn	1.03
dn/dc (mL/g) in DMF at 35 °C	0.162

## 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

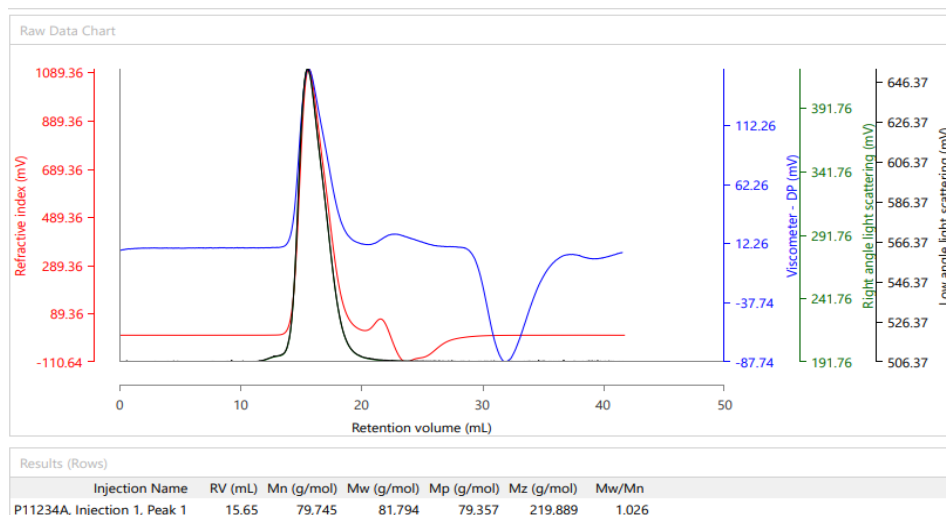
## Validation of Architecture

### 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



P11234A-S4VP

The <sup>1</sup>H NMR spectrum shows a broad peak at ~7.1 ppm (integration 2.00) and a large multiplet between 6.2-6.8 ppm (integration 18.48). The chemical structure of P11234A-S4VP is shown above the spectrum, featuring a polyisobutylene backbone with a phenyl group and a 4-phenyl-2,6-dimethylpyridine-5-yl side chain. The NMR data is consistent with the structure, with the aromatic protons of the pyridine ring appearing in the 6.2-6.8 ppm region and the phenyl protons of the backbone appearing in the 7.1 ppm region.