

# Product Profile

## Identification

**Product Name:** Poly(styrene-b-2-vinyl-pyridine)

**Product Lot Number:** P9260-R-S2VP

**CAS #:** 24980-54-9

**Product Chemical Architecture:**



**Composition:**

<b>Composition (S-b-2VP)</b>	<b>1,647,000-b-81,000</b>
<b>2VP mole %</b>	<b>4.7</b>
<b>Mn (g/mole)</b>	<b>1,729,000</b>
<b>Mw (g/mole)</b>	<b>1,795,000</b>
<b>Mw/Mn</b>	<b>1.04</b>
<b>dn/dc (mL/g) in DMF at 35 °C</b>	<b>0.164</b>

## Method of Synthesis

The polymer is synthesized by anionic polymerization process.

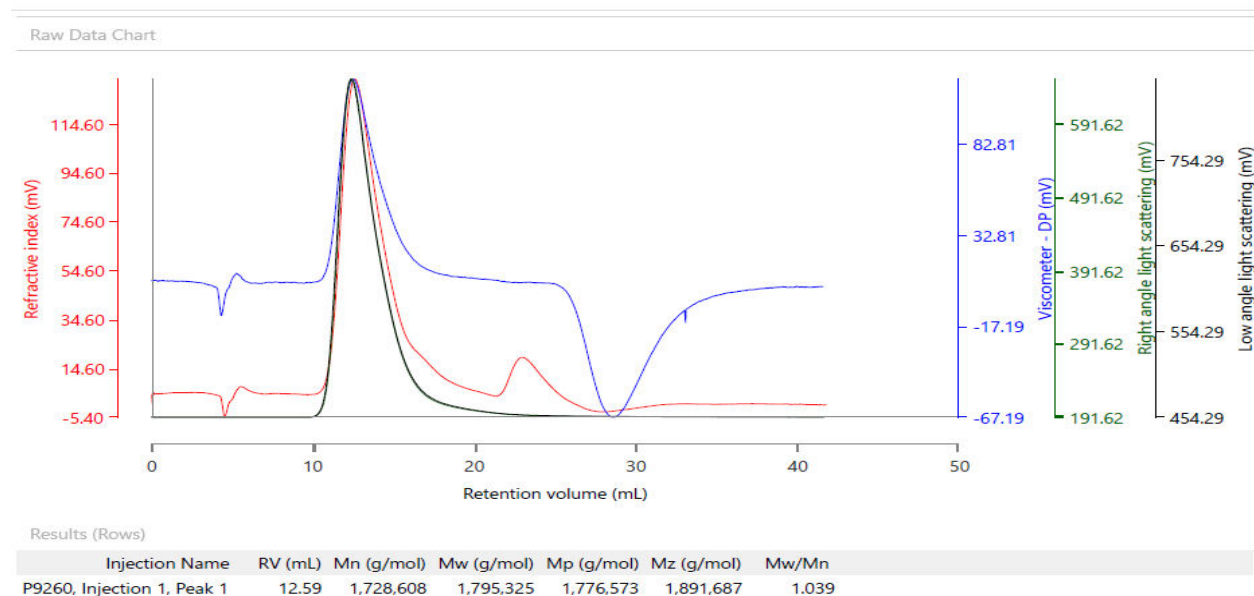
**Solubility in different solvents:**

THF	√	DMF	√
Alcohol	<b>Depends on composition</b>	CHCl <sub>3</sub>	√
Toluene <sub>(hot)</sub>	√	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.



1H NMR spectrum of P9260-S2VP (run in DMF). The spectrum shows peaks corresponding to the polymer structure, with chemical shifts ranging from approximately 6.5 to 8.6 ppm. The chemical structure of the polymer is shown above the spectrum, featuring a polyisobutylene (PIB) segment, a poly(1-phenyl-1-propyne) (PPA) segment, and a poly(2-vinylpyridine) (PVP) segment. The PIB segment is labeled with 'H3C' and 'H'. The PPA segment is labeled with 'H' and 'H3C'. The PVP segment is labeled with 'H' and 'H3C'. The spectrum is labeled 'P9260-S2VP (run in DMF)'.