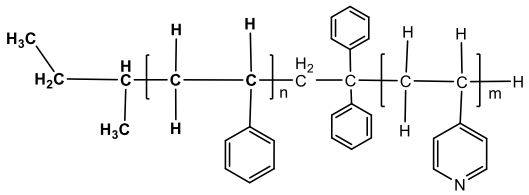
# Product Profile

## Identification

**Product Name:** Poly(styrene-b-4-vinyl-pyridine)
**Product Lot Number: P10999A-R-S4VP**
**CAS #: 26222-40-2**
**Product Chemical Architecture:**



**Composition:**

| Composition (S-b-4VP) | 35,000-b-25,000 |
|---|---|
| 4VP mole% | 42.3 |
| Mn (g/mole) | 60,000 |
| Mw (g/mole) | 65,000 |
| Mw/Mn | 1.09 |
| dn/dc (mL/g) in DMF at 35 ºC | 0.16 |

## Method of Synthesis

The polymer is synthesized by anionic polymerization process.

**Solubility in different solvents:**

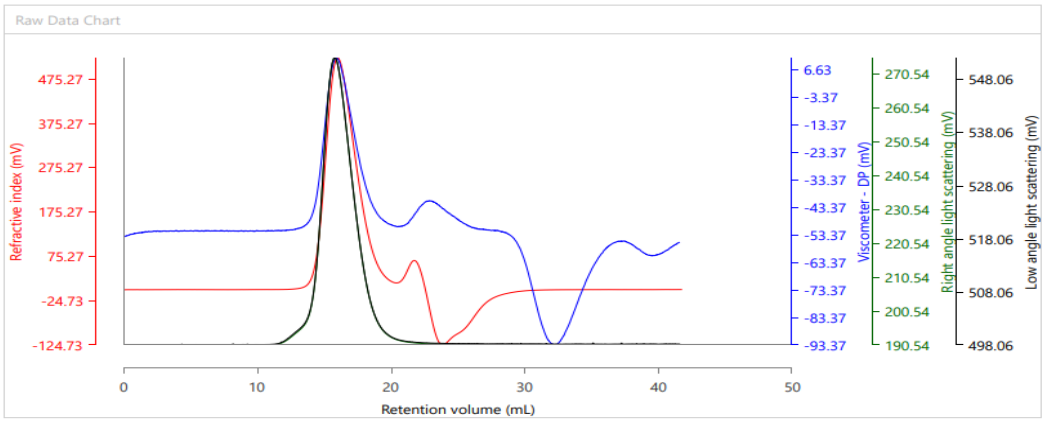
| | | | |
|---|---|---|---|
| THF | **Depends on composition** | DMF | √ |
| Alcohol | **Depends on composition** | $CHCl_3$ | √ |
| $Toluene_{(hot)}$ | **X** | Water | **X** |

## Validation of Architecture

**A. <u>Gel Permeation Chromatography (GPC), SEC Profile:</u>**

Molecular weights were determined by Malvern OmniSec Reveal & Resolve GPC/SEC System equipped with Triple detector (RI, Viscometer, RALS 90º and LALS 7º) 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




Results (Rows)

| Injection Name | RV (mL) | Mn (g/mol) | Mw (g/mol) | Mp (g/mol) | Mz (g/mol) | Mw/Mn |
|---|---|---|---|---|---|---|
| P10999A, Injection 1, Peak 1 | 16.02 | 60,275 | 65,490 | 61,196 | 118,175 | 1.087 |

**B.** **NMR ($H^1$NMR) of S4VP in CDCl3，500 MHz**