

Product Profile

Identification

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

Product Lot Number: P4923-R-S2VP

CAS #: 24980-54-9

Product Chemical Architecture:



Composition:

Composition (S-b-2VP)	170,000-b-16,000
2VP mole %	8.7
Mn (g/mole)	186,000
Mw (g/mole)	189,000
Mw/Mn	1.02
dn/dc (mL/g) in DMF at 35 °C	0.164

Method of Synthesis

The polymer is synthesized by anionic polymerization process.

Solubility in different solvents:

THF	√	DMF	√
Alcohol	Depends on composition	CHCl ₃	√
Toluene _(hot)	√	Water	X

Validation of Architecture

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

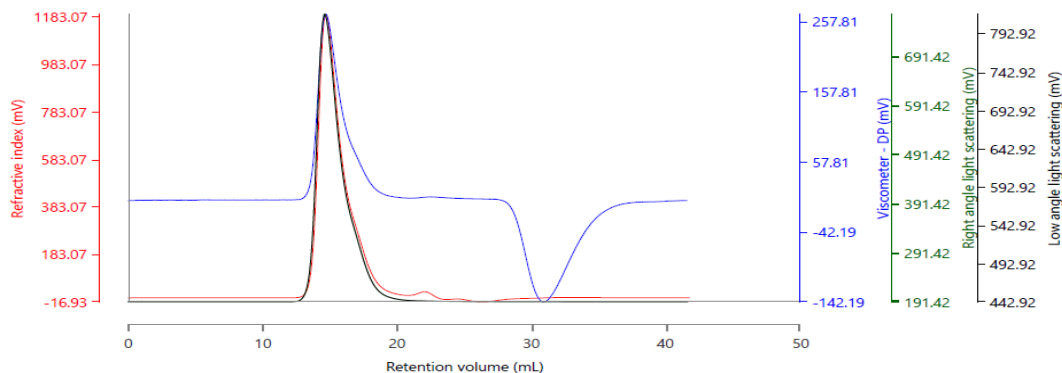
Molecular weights were determined by Malvern OmniSec Reveal & Resolve GPC/SEC System equipped with Triple detector (RI, Viscometer, RALS 90° and LALS 7°) and two columns (PSS, SDV, 8x300 mm). DMF with 0.023M LiBr was the eluent. The flow rate was 0.7 ml/min.

Polymer Source

Malvern Panalytical



Raw Data Chart



Results (Rows)

Injection Name	RV (mL)	Mn (g/mol)	Mw (g/mol)	Mp (g/mol)	Mz (g/mol)	Mw/Mn
P4923, Injection 1, Peak 1	14.72	185,791	189,389	184,261	194,442	1.019

The figure displays the ¹H NMR spectrum of the copolymer P4923-R-S2VP. The x-axis represents the chemical shift in ppm (f1), ranging from 9.0 to 0.5. The y-axis represents the intensity, ranging from -200 to 3400. The spectrum shows several distinct peaks: aromatic protons between 6.5 and 7.5 ppm, a broad peak around 1.5 ppm, and a sharp peak at approximately 1.0 ppm. Integration values are provided for two regions: 1.00 for the peak at 1.0 ppm and 55.49 for the aromatic region. The chemical structure of the copolymer is shown above the spectrum, with labels 'n' and 'm' indicating the repeating units. A green circle highlights a specific proton in the structure, corresponding to the peak at 1.0 ppm. A red circle highlights a specific proton in the structure, corresponding to the peak at 1.5 ppm.