

Product Profile

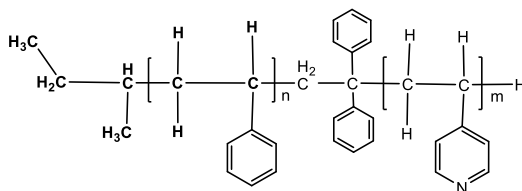
Identification

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

Product Lot Number: P5677-R-S4VP

CAS #: 26222-40-2

Product Chemical Architecture:



Composition:

Composition (S-b-4VP)	33,000-b-6,000
4VP mole%	14.8
Mn (g/mole)	39,000
Mw (g/mole)	43,000
Mw/Mn	1.11
dn/dc (mL/g) in DMF at 35 °C	0.163

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

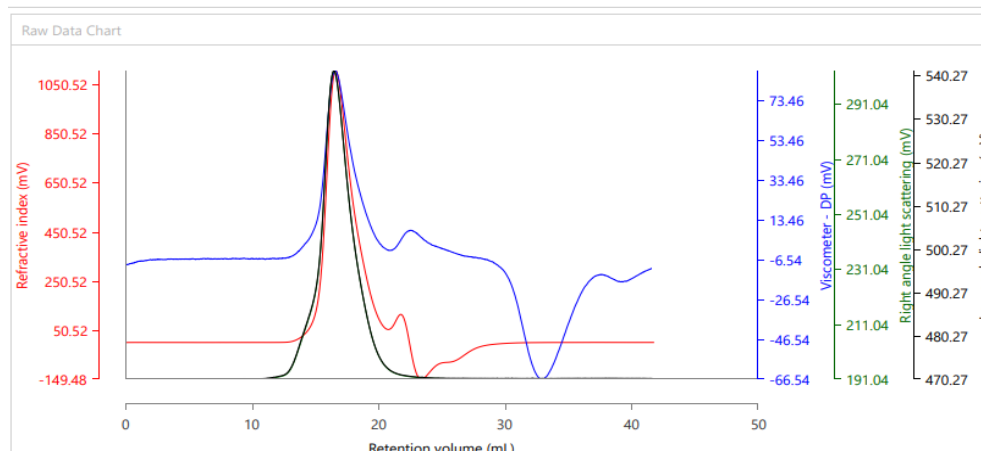
Validation of Architecture

A. 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



Injection Name	RV (mL)	Mn (g/mol)	Mw (g/mol)	Mp (g/mol)	Mz (g/mol)	Mw/Mn
P5677, Injection 1, Peak 1	16.63	38,798	43,079	37,892	61,009	1.11

P5677-S4VP

Chemical structure of the polymer is shown above the spectrum. The structure is a block copolymer with a poly(2-vinylpyridine) block and a poly(4-vinylbenzyl) block. The peaks are assigned to the protons in the structure: aromatic protons (6.5-7.5 ppm), methylene protons (4.5-5.5 ppm), and methine protons (4.5-5.5 ppm). Integration values are shown below the peaks: 1.00 for the aromatic region and 15.34 for the aliphatic region.