

Product Profile

Identification

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

Product Lot Number: P10208A-R-S4VP

CAS #: 26222-40-2

Product Chemical Architecture:



Composition:

Composition (S-b-4VP)	373,500-b-326,500
4VP mole%	46.6
Mn (g/mole)	700,000
Mw (g/mole)	882,000
Mw/Mn	1.26
dn/dc (mL/g) in DMF at 35 °C	0.159

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:

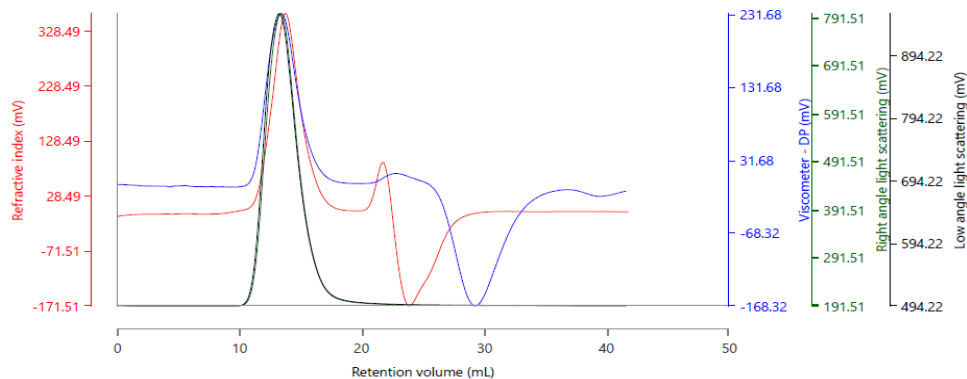
Molecular weights were determined by Malvern OmniSec Reveal & Resolve GPC/SEC System equipped with Triple detector (RI, Viscometer, RALS 90° and LALS 7°) and two columns (PSS, SDV, 8x300 mm). DMF with 0.023M LiBr was the eluent. The flow rate was 0.7 ml/min.

Polymer Source

Malvern Panalytical



Raw Data Chart



Results (Rows)

Injection Name	RV (mL)	Mn (g/mol)	Mw (g/mol)	Mp (g/mol)	Mz (g/mol)	Mw/Mn
P10208A, Injection 1, Peak 1	13.76	699,973	881,556	724,475	1,028,807	1.259

P10208A-S4VP run in DMF

Chemical structure of the polymer is shown above the spectrum. The structure consists of a backbone with a methyl group, a phenyl group, and a pyridine ring. The pyridine ring is substituted with a methyl group and a phenyl group. The structure is labeled with n and m to indicate the number of repeating units.

The spectrum shows peaks corresponding to the protons in the polymer structure. The peak at ~7.2 ppm is assigned to the pyridine ring. The peak at ~4.1 ppm is assigned to the methylene group. The peak at ~1.1 ppm is assigned to the methyl group. Integration values of 2.00 and 5.91 are shown.