

Product Profile

Identification

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

Product Lot Number: P10848-R-S2VP

CAS #: 24980-54-9

Product Chemical Architecture:



Composition:

Composition (S-b-2VP)	72,000-b-29,000
2VP mole %	29.1
Mn (g/mole)	101,000
Mw (g/mole)	104,000
Mw/Mn	1.03
dn/dc (mL/g) in DMF at 35 °C	0.16

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

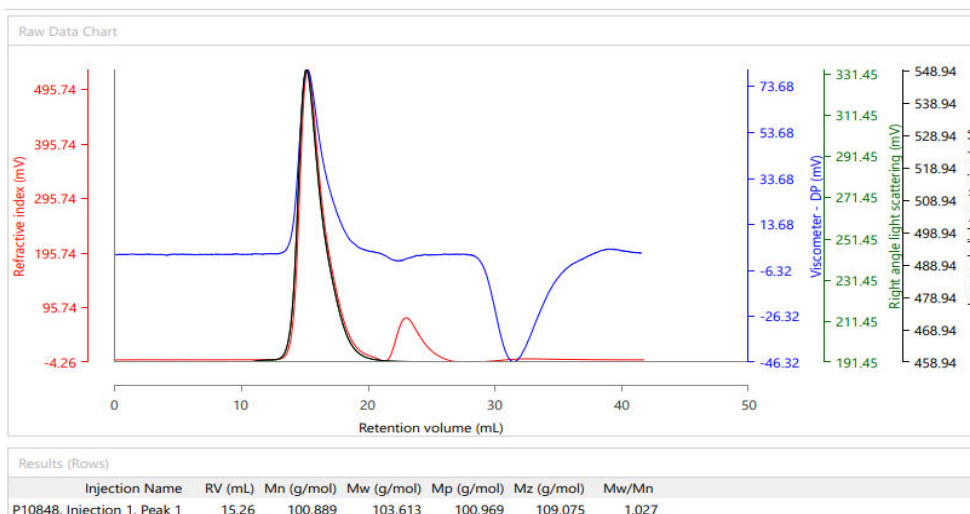
Validation of Architecture

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



The figure displays the ¹H NMR spectrum of the polymer P10848-S2VP. The chemical structure of the polymer is shown at the top, featuring a backbone with three repeating units: a methyl methacrylate unit (with methyl groups highlighted in red), a styrene unit (with a phenyl ring highlighted in black), and a 4-vinylpyridine unit (with a pyridine ring highlighted in green). The spectrum below shows the corresponding proton signals. The x-axis represents the chemical shift in ppm, ranging from 9.8 to 5.4. The y-axis represents the intensity, ranging from -200 to 1400. Two integration regions are marked with brackets and labeled with their respective values: a region from approximately 8.3 to 8.7 ppm with an integration of 1.00, and a larger region from approximately 6.2 to 7.4 ppm with an integration of 15.18. The spectrum shows a small peak at ~8.6 ppm (methyl protons), a multiplet between 6.2-7.4 ppm (aromatic and vinylic protons), and a sharp peak at ~3.6 ppm (methoxy protons).