



## Product Profile

### Identification

**Product Name:** POLY(2-VINYL PYRIDINE)

**Synonym(s):** P2VP

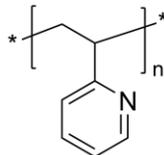
**Linear Formula:** (C<sub>7</sub>H<sub>7</sub>N)<sub>n</sub>

**CAS:** 25014-15-7

**Product Lot Number:** P8431-R-P2VP

**Product Chemical Architecture:**

**Composition:**



<b>Mn (g/mole)</b>	<b>369,000</b>
<b>MW (g/mole)</b>	<b>385,000</b>
<b>Mw/Mn</b>	<b>1.04</b>
<b>dn/dc (mL/g)</b>	<b>0.167 in THF</b>

### Method of Synthesis

Poly(2-vinyl pyridine) is synthesized by living anionic polymerization of 2-vinyl pyridine using an adduct of Sec-butyllithium and diphenyl ethylene. Polymerization is carried out in THF at -78 °C. Polymerization reaction is terminated using degassed methanol.

### Solubility in different solvents

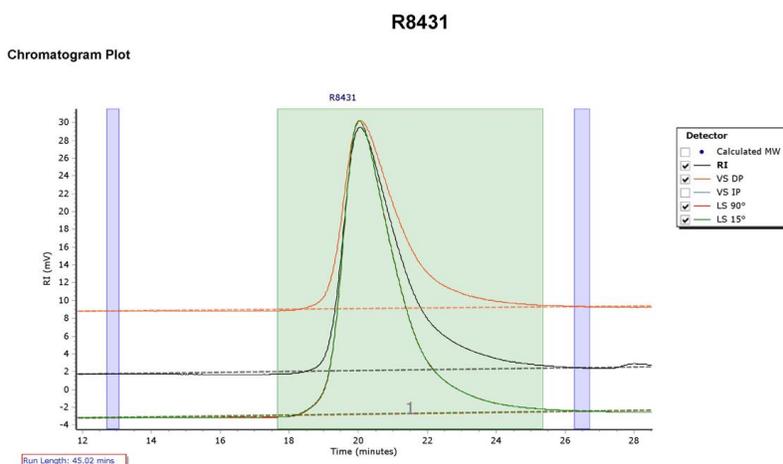
THF	√	DMF	√
Methanol	√	CHCl <sub>3</sub>	√
Toluene (Hot)	√	DMSO	√

### Validation of Architecture

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

Molecular weights were determined by Agilent Technologies 1260 Infinity II GPC/SEC System equipped with Triple detector (RI, Viscometer, RALS 90° and LALS 15°) and three columns (PLgel 5 μm, 10 μm × 2). THF with 1% (v/v) triethylamine) was the eluent. The flow rate was 1.0 ml/min.

Agilent GPC/SEC Software



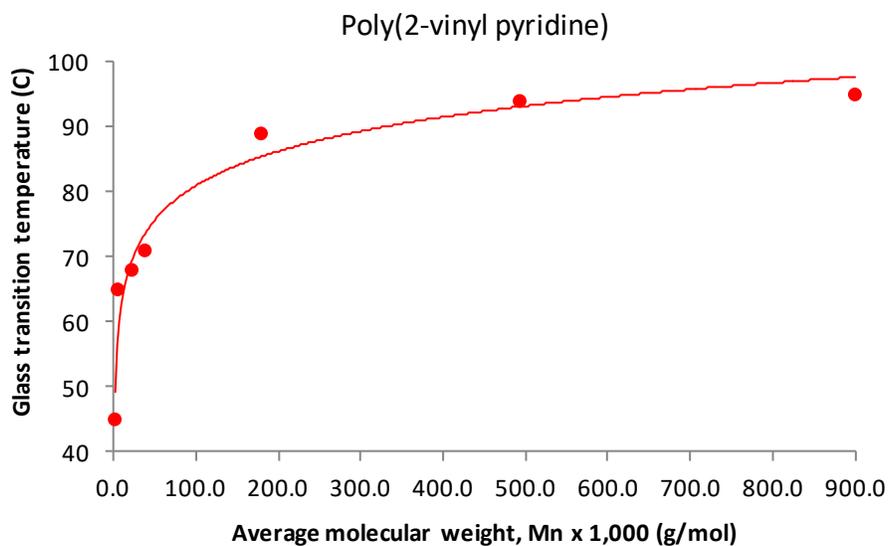
Molecular Weight Averages

Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz+1 (g/mol)	Mv (g/mol)	PD
Peak 1	428369	369425	384727	397047	407088	394807	1.041

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**B. Thermal analysis results:**

Dependence of glass transition temperature ( $T_g$ ) of P2VP from its molecular weight:



**C. NMR (HNMR) OF P2VP in CDCl<sub>3</sub>, general**

