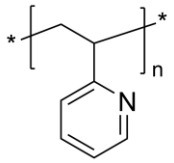
Product Profile

Identification

Product Name: POLY(2-VINYL PYRIDINE)
Synonym(s): P2VP
Linear Formula: $(C_7H_7N)_n$
CAS: 25014-15-7
Product Lot Number: P18148-R-P2VP
Product Chemical Architecture:
Composition:



Mn (g/mole)	**29,300**
MW (g/mole)	**29,700**
Mw/Mn	**1.02**
dn/dc (mL/g)	**0.167 in THF**

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	√	CHCl3	√
Toluene (Hot)	√	DMSO	√

Validation of Architecture

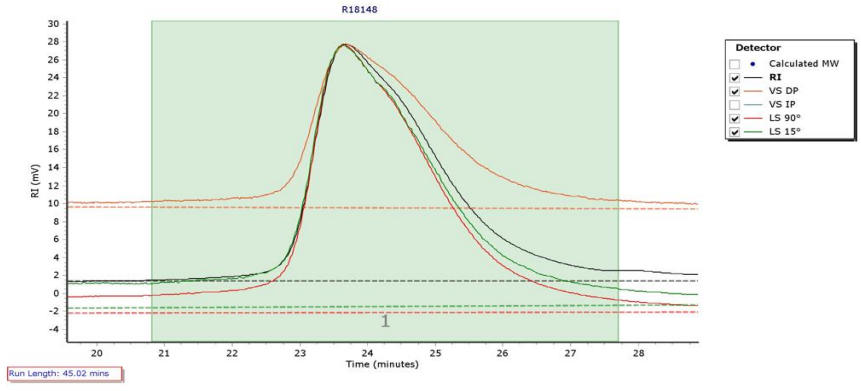
A. <u>Gel Permeation Chromatography (GPC), SEC- Profile:</u>

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 um, 10 um × 2). THF with 1% (v/v) triethylamine) was the eluent. The flow rate was 1.0 ml/min.

Agilent GPC/SEC Software

R18148

Chromatogram Plot



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	32052	29296	29723	30121	30496	30032	1.015

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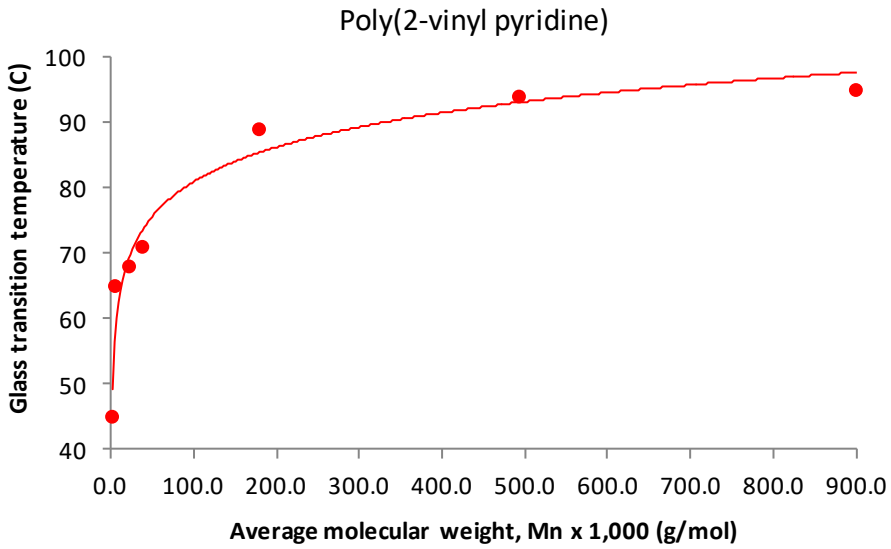
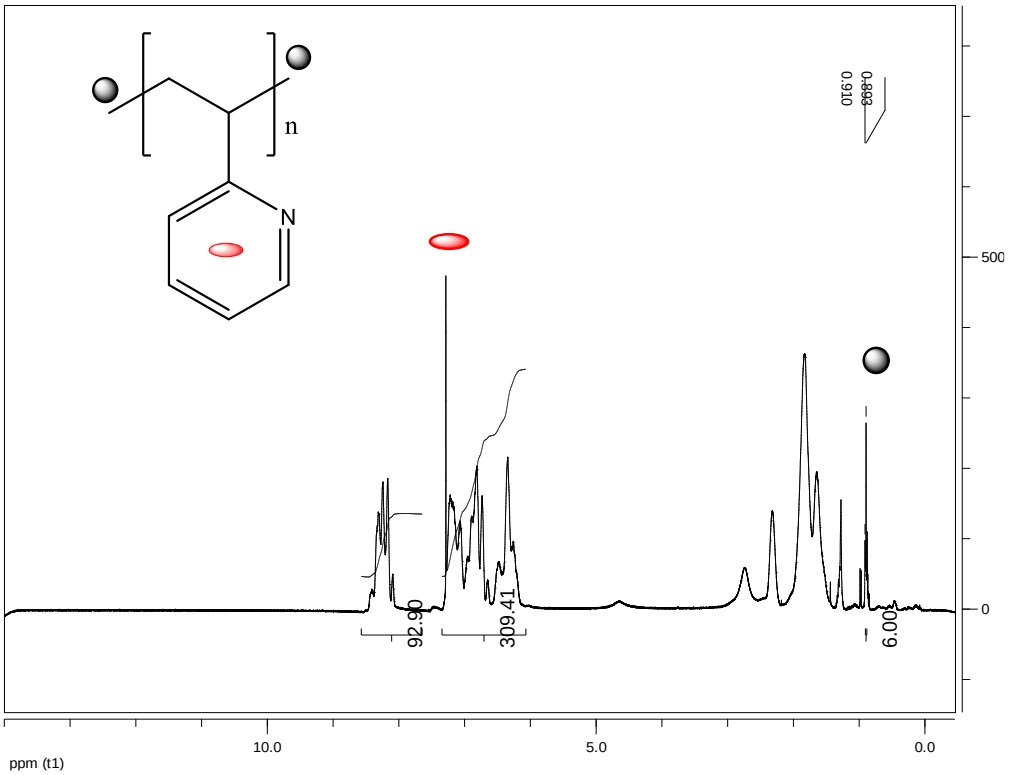
B. Thermal analysis results:

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



C. NMR (HNMR) OF P2VP in $CDCl_3$, general



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