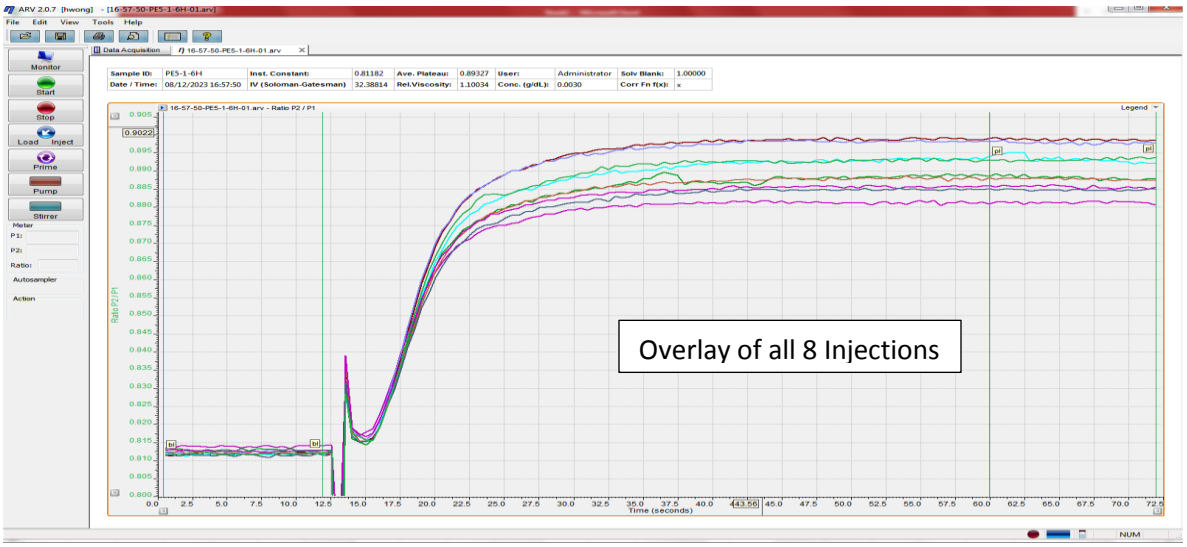
HT-DSV Application Note #18

Dilute Solution Viscosity Measurement of HMW Polyethylene

The purpose of this App Note is to present the very high range (7 to 8 MD PE) of Intrinsic Viscosities (IV) achievable with an HMJ Y501 Dual Capillary High Temperature Relative Viscometer (HTDSV) system. The analysis conditions are listed below.

Solvent	Decalin + 250 ppm BHT
Sample Concentration	0.003 g/dL
Prep Temperature	135C
Dissolution Time	6 Hours
Analysis Temperature	135C

The following is an overlay of 2 HMWPE ViscoGrams showing smooth curves not obtainable previously.



Sample	Measured IV (dL/g)	M-H Calc MW		Sample	Measured IV (dL/g)	M-H Calc MW
PE-1-1A	32.3881			PE-2-1A	33.8891	
PE-1-1B	34.5628			PE-2-1B	33.8785	
PE-1-2A	30.0316			PE-2-2A	32.5177	
PE-1-2B	30.2334			PE-2-2B	32.5343	
Average	31.8040	5,350,000		Average	33.2049	5,700,000
SD	2.12606	(Est 7,800,000)		SD	0.78397	(Est 8,430,000)
RSD	6.68%			RSD	2.36%	