

Warning: The Cubic model is aliased.

Fit Summary

Response 1: Gel strength

Source	Sequential p-value	Lack of Fit p-value	Adjusted R ²	Predicted R ²	
Linear	< 0.0001	< 0.0001	0.8214	0.6187	
2FI	0.0018	< 0.0001	0.9366	0.8513	
Quadratic	0.0143	< 0.0001	0.9758	0.8578	Suggested
Cubic	0.0002	< 0.0001	0.9988	0.9436	Aliased

Sequential Model Sum of Squares [Type I]

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Mean vs Total	703.18	1	703.18			
Linear vs Mean	378.25	2	189.12	28.59	< 0.0001	
2FI vs Linear	45.01	1	45.01	19.16	0.0018	
Quadratic vs 2FI	14.86	2	7.43	8.29	0.0143	Suggested
Cubic vs Quadratic	6.06	2	3.03	70.21	0.0002	Aliased
Residual	0.2159	5	0.0432			
Total	1147.58	13	88.28			

Select the highest order polynomial where the additional terms are significant and the model is not aliased.

Lack of Fit Tests

Source	Sum of Squares	df	Mean Square	F-value	p-value	
Linear	66.16	6	11.03	5.513E+07	< 0.0001	
2FI	21.14	5	4.23	2.114E+07	< 0.0001	
Quadratic	6.28	3	2.09	1.046E+07	< 0.0001	Suggested
Cubic	0.2159	1	0.2159	1.079E+06	< 0.0001	Aliased
Pure Error	8.000E-07	4	2.000E-07			

The selected model should have insignificant lack-of-fit.

Model Summary Statistics

Source	Std. Dev.	R ²	Adjusted R ²	Predicted R ²	PRESS	
Linear	2.57	0.8511	0.8214	0.6187	169.45	
2FI	1.53	0.9524	0.9366	0.8513	66.06	
Quadratic	0.9470	0.9859	0.9758	0.8578	63.19	Suggested
Cubic	0.2078	0.9995	0.9988	0.9436	25.08	Aliased

Focus on the model maximizing the **Adjusted R²** and the **Predicted R²**.