

Coating Parameters – HPMC (171ZA series) Based White and Pigmented Formulations

Nutrafinish®, Titanium Dioxide Free Film Coatings are made specifically for nutritional and dietary supplement products regulated as foods. Elimination of titanium dioxide provides manufacturers with an alternative coating finish that satisfies aesthetic appeal while addressing current market concerns. Nutrafinish®, TiO₂ free film coating options are available as clear, white, or pigmented systems. The coating parameters listed in the table below are based on Colorcon data for HPMC based white and pigmented formulations. Individual product and machine functions should be considered, and conditions altered as required.

Pan Type		Fully Perforated Side Vented Coating Pan			
Pan Diameter	cm	38	61	122	152
	in	15	24	48	60
Solution Preparation					
Solvent		Purified Water	Purified Water	Purified Water	Purified Water
Solids Content	% w/w	18	18	18	18
Run Objectives					
Theoretical Weight Gain	% w/w	5	5	5	5
Tablet Charge	kg	1.5-3	12-15	120-160	320-350
Gun Configuration					
Example Spray Gun	Type	Schlick 931/7-1 S22	Schlick 931/7-1 S35 (ABC)	Schlick 931/7-1 S35 (ABC)	Schlick 931/7-1 S35 (ABC)
Number of Guns	guns	1	1-2	3-4	5-6
Nozzle Diameter	mm	1.2	1.2	1.2	1.2
	in	0.05	0.05	0.05	0.05
Gun to Bed Distance	cm	10	18	25	25
	in	4	7	10	10
Gun to Gun Distance	cm	N/A	10	15	15
	in	N/A	4	6	6
Atomizing Air Pressure	bar	1.4	1.4	1.4	1.4
	psi	20	20	20	20
Pattern Air Pressure	bar	1.4	1.4	1.4	1.4
	psi	20	20	20	20
Process Parameters					
Drying Air Volume	cu.m/hr	250-300	420-470	2210-3400	5440-6630
	cu.ft/min	145-175	250-275	1300-2000	3200-3900
Pan Speed	rpm*	18	14	8	6
Pre-warm tablet Bed	°C	45-48	45-48	45-48	45-48
	°F	113-118	113-118	113-118	113-118
Inlet Air Temperature	°C	60	65	56	56
	°F	140	149	149	149
Tablet Bed Temperature	°C	45-48	45-48	45-48	45-48
	°F	108-113	108-113	108-113	108-113
Spray Rate	g/min	15-20	40-60	160-280	394-546
Approximate Coating Times	min	21-56	56-104	119-278	163-247
*Pan speed should be set so that even mixing of the bed occurs. This will be influenced by tablet size, shape, friability, and baffle type in the pan.					

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