

Coating Parameters – HPMC 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	38.1	60.96	122	152.4
	in	15	24	48	60
Solution Preparation					
Solvent		Purified Water	Purified Water	Purified Water	Purified Water
Solids Content	% w/w	18-20	18-20	18-20	18-20
Run Objectives					
Theoretical Weight Gain	% w/w	3-5	3-5	3-5	3-5
Tablet Charge	kg	1.5-3	12-15	120-160	320-350
Gun Configuration					
Example Spray Gun	Type	Schlick 931/7-1 S22	Spraying Systems 1/8 VAU	Schlick 931/7-1 S35 (ABC)	Manesty
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	17	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	1.7	2.5	2.5
	psi	20	25	35	35
Pattern Air Pressure	bar	1.4	1.7	2.5	2.5
	psi	20	25	35	35
Process Parameters					
Drying Air Volume	cu.m/hr	250-290	425-470	2300-3060	5440-6630
	cu.ft/min	145-175	250-275	1350-1800	3200-3900
Pan Speed	rpm*	18	14	8	6
Pre-warm tablet Bed	°C	45-50	45-50	45-50	45-50
	°F	113-122	113-122	113-122	113-122
Inlet Air Temperature	°C	60	65	65	65
	°F	140	149	149	149
Tablet Bed Temperature	°C	45-48	45-48	45-48	45-48
	°F	113-118	113-118	113-118	113-118
Spray Rate	g/min	15-20	40-60	260-430	650-750
Approximate Coating Times	min	12-56	30-104	42-171	64-150
*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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