

NITROCELLULOSE PIGMENTED SYSTEM

USING POLYSACCHARIDE RESIN (CHEMPART SC400)



MATERIALS:



Nitrocellulose (vis 0.5 sec)



Short non dry alkyd (70%-based on Coconut oil)



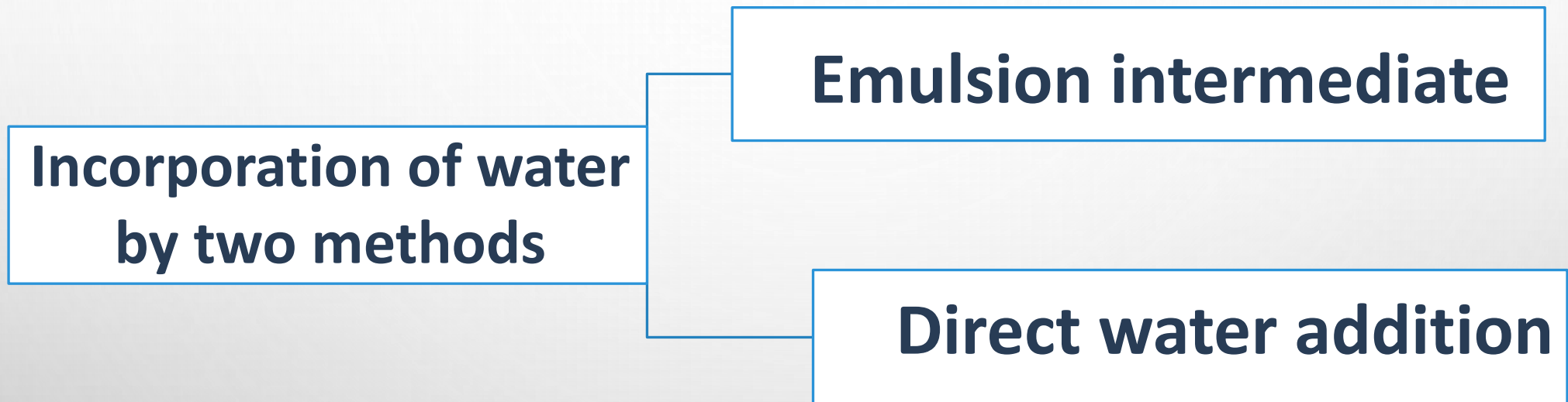
Polysaccharide resin (Chempart SC400)



SCOPE:

incorporation of water in Top-coat and Under-coat Nitrocellulose pigmented system using polysaccharide resin (Chempart SC400).

Two pigmented system (medium quality-high gloss)



MEDIUM QUALITY NITROCELLULOSE PIGMENTED SYSTEM

1-Medium quality pigmented system - emulsion intermediate.

➤ Emulsion intermediate formulation:

Material	Percent
Short non dry alkyd 70%	17
Xylene	16
Sc400	5
Water	62
Total	100%

-Specifications

Test	Results
Viscosity s-5 /rpm50 @25°C	16,580 cp
Density @25°C	1 g/ml
Heat Stability test @60°C	1 month

➤ **MEDIUM QUALITY TOP COAT PIGMENTED SYSTEM/ EMULSION INTERMEDIATE:**

Material	Blank	Emulsion intermediate
Short non dry alkyd 70%	40.3	29.5
Xylene	2.6	2.3
Dispersant	0.2	0.2
Titanium dioxide	15	15
Nitrocellulose solution 20%	25	17
Emulsion intermediate	-	25
Bentone SD2	0.2	0.2
Butyl acetate	11.5	7
Ethyl acetate	5	3.6
Leveling agent	0.2	0.2
Total	100	100

Note: water content 15.5 %

✓ **RESULTS:**

Test	Blank	Direct water addition
Initial viscosity @25°C	7.152 cp	7,216 cp
Density	1.12 gm/ml	1.12 gm/ml
Initial gloss	76	74
Gloss retention- 24 hour	76	74
Gloss retention- 7 days	75	75
Tack free time	10 min	10 min
Through drying	3 h	3 h
Adhesion to metal and wooden substrates	Good	Good
Heat Stability test @60°C	1 month	1 month

➤ **MEDIUM QUALITY UNDER-COAT PIGMENTED SYSTEM/ EMULSION INTERMEDIATE:**

Material	Blank	Emulsion intermediate
Short non dry alkyd 70%	28.2	21
Xylene	3	1
Dispersant	0.3	0.3
Titanium dioxide	5	5
Nitrocellulose solution 20%	26	19
Emulsion intermediate	-	25
EJSF	23	23
Bentone SD2	0.2	0.2
Butyl acetate	9.6	3.3
Ethyl acetate	4.5	2
Leveling agent	0.2	0.2
Total	100	100

Note: water content 15.5 %

✓ **RESULTS**

Test	Blank	Emulsion intermediate
Initial viscosity @25°C	12,800	15,560 cp
Density	1.23 gm/ml	1.23 gm/ml
gloss	matt	matt
Tack free time	10 min	10 min
Through drying	2.5 h	2.5 h
Adhesion to metal and wooden substrates	good	Good
Heat Stability test @60°C	1 month	1 month

**2-Medium quality Nitrocellulose
pigmented system-direct water addition.**

➤ MEDIUM QUALITY TOP-COAT PIGMENTED SYSTEM/DIRECT WATER ADDITION:

Material	Blank	Direct water addition
Short non dry alkyd 70%	40.1	33.1
Xylene	2.8	6.1
Dispersant	0.2	0.2
Titanium dioxide	15	15
Chempart sc400	-	1
Water	-	15.5
Nitrocellulose solution 20%	25	19.5
Bentone SD2	0.2	0.2
Butyl acetate	11.5	5.2
Ethyl acetate	5	4
Leveling agent	0.2	0.2
Total	100	100

Note: water content 15.5%

✓ **RESULTS :**

Test	Blank	Direct water addition
Initial viscosity @25°C	7152 cp	5624 cp
Density	1.1 gm/ml	1.2 gm/ml
Initial gloss	76	80
Gloss retention- 24 hour	76	80
Gloss retention- 7 days	75	79
Tack free time	10 min	10 min
Through drying	3 h	3 h
Adhesion to metal and wooden substrates	Good	Good
Heat Stability test @60°C	1 month	1 month

➤ **MEDIUM QUALITY UNDER-COAT PIGMENTED SYSTEM/ DIRECT WATER ADDITION:**

Material	Blank	Direct water addition
Short non dry alkyd	26.3	22.2
Xylene	3	2.5
Dispersant	0.3	0.3
Titanium dioxide	5	5
Sc400	-	1
Water	-	15.5
Nitrocellulose solution 20%	26	19
Bentone SD2	0.2	0.3
Butyl acetate	9.5	6.5
Ethyl acetate	4.5	2.5
EJSF	25	25
Leveling agent	0.2	0.2
Total	100	100

Note: water content 15.5%



RESULTS:

Test	Blank	Direct water addition
Initial viscosity @25°C	12,800	6096 cp
Density	1.23 gm/ml	1.25 gm/ml
gloss	matt	matt
Tack free time	10 min	10 min
Through drying	2.5 h	2.5 h
Adhesion to metal and wooden substrates	Good	Good
Heat Stability test @60°C	1 month	1 month

The background is a light gray gradient. In the top-left and bottom-right corners, there are several realistic water droplets of various sizes, rendered with soft shadows and highlights to give them a three-dimensional appearance. Centered in the upper half of the image is a faint, circular, embossed-style logo. The logo features a central emblem surrounded by concentric circles and text, though the details are too light to read clearly.

HIGH GLOSS NITROCELLULOSE PIGMENTED SYSTEM

1-High gloss Nitrocellulose pigmented system - emulsion intermediate.

➤ **Emulsion intermediate formulation:**

Material	Percent
Short non dry alkyd 70%	17
Xylene	16
Sc400	5
Water	62
Total	100%

-Specifications

Test	Results
Viscosity s-5 /rpm50 @25°C	16,580 cp
Density @25°C	1 g/ml
Heat Stability test @60°C	1 month

➤ HIGH GLOSS TOP-COAT PIGMENTED SYSTEM/ EMULSION INTERMEDIATE:

Material	Blank	Emulsion intermediate
Short non dry alkyd 70%	44	35
Xylene	5.8	3
Dispersant	0.2	0.2
Titanium dioxide	15	15
Nitrocellulose solution 20%	23	19
Emulsion intermediate	-	16.2
Bentone SD2	0.2	0.2
Butyl acetate	7.3	7
Ethyl acetate	4.3	4.2
Leveling agent	0.2	0.2
Total	100	100

Note: water content 10 %

✓ **RESULTS:**

Test	blank	Emulsion intermediate
Initial viscosity @25°C	1616 cp	2408 cp
Density@25°C	1.1 gm/ml	1.1 gm/ml
Initial gloss	76	85
Gloss retention- 24 hour	76	85
Gloss retention- 7 days	74	83
Tack free time	10 min	10 min
Through drying	3 h	3 h
Adhesion to metal and wooden substrates	Good	Good
Heat Stability test @60°C	1 month	1 month

2-High gloss Nitrocellulose pigmented system by direct water addition Method.

➤ HIGH GLOSS TOP-COAT PIGMENTED SYSTEM/DIRECT WATER ADDITION:

Material	blank	Direct water addition
Short non dry alkyd	44	36.9
Xylene	5.8	5.3
Dispersant	0.2	0.2
Titanium dioxide	15	15
Chempart sc400	-	1
Water	-	10
Nitrocellulose solution 20%	23	19.7
Bentone SD2	0.2	0.2
Butyl acetate	7.3	7.2
Ethyl acetate	4.3	4.3
Leveling agent	0.2	0.2
Total	100	100

Note: water content 10%



RESULTS :

Test	blank	Direct water addition
Initial viscosity @25°C	1616 cp	3848 cp
Density	1.1 gm/ml	1.20 gm/ml
Initial gloss	76	91
Gloss retention- 24 hour	75	90
Gloss retention- 7 days	73	88
Tack free time	10 min	10 min
Through drying	3 h	3 h
Adhesion to metal and wooden substrates	Good	Good
Stability in oven	Stable	Stable

 Thank You
For Your Attention

