

BINDERS - Zytrol 600 and Zytrol 700

PRODUCT CHARACTERISTICS

Binder plays an important role in Pigment Printing. Within Textile Printing, pigment printing holds a leading position. Almost 50% of all prints Worldwide are produced by this printing method. Zydex has developed 2 different types of Binder for Pigment Printing namely Zytrol 600 and Zytrol 700.

Looking at the growing demand for Soft Pigment Printing, we have introduced Zytrol 700. This product also exhibits good fastness apart from good colour value.

ZYTROL 600	ZYTROL 700
Formaldehyde free	Formaldehyde Based
Soft and Smooth handle	Very Soft and Smooth handle
Brilliant Print, high colour yield	Brilliant Print, high colour yield
Good Wash and Rub Fastness	Excellent Wash Fastness and Good Rub Fastness

CHEMICAL PROPERTIES

	ZYTOL 600	ZYTROL 700
Appearance	Milky White	Translucent off White
Nature	Self cross linking acrylic co-polymer	
pH	7 – 7.5	
Solid Content	41 ± 2 %	
Ionic Nature	Anionic	

APPLICATION

To get the desired print quality with lowest possible cost, it will be advisable to follow the guidelines given below which are based on actual experience in the field.

PASTE PREPARATION PROCEDURE

Paste preparation procedure is very important to get good print quality. Some Printers make a single paste with 10% binder content and use this for all shades. This will lead to problems as explained below:

	Light Colours (up to 2%)	Dark Colours (6 %)
Required Binder % in paste with pigment to binder ratio of 1:2.5	5%	15 %
Actual Binder say 10%	+100% (Excess)	-33% (deficit)
Problems	Higher Printing cost, Harsh Feel	Poor Fastness

Typically Pigment to Binder Ratio should be maintained 1:2.5 to get Good Fastness.

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To optimize binder consumption following methodology is followed

Step	Paste for →	Recommended RPM	Stirring time
1	Water : Approx. 50% Binder (as per dosage) : 100% R-66 : 0.7 to 1% R-55 : 1% (mix the binder water thoroughly to form emulsion)	<300	0.5 to 1 min
2	Add liquor ammonia - 0.5 to 1 %	<300	0.5 min
3	Add 50 % thickener (Zycoprint) Qty slowly to get creamy paste.	300 to 600	1.5 to 2 min
4	Balance 50 % water & 50 % thickener (Zycoprint) Add slowly from opp. Sides with drip method (i) thickener from say 2.5 lit PET bottle (if convenient for 100 to 200 kg paste) (ii) water from drum and tap to control flow. both should be added at ratio of 1:20 .	600 to 1000	1 to 1.5 min
5	Add Urea water as per requirement.	-	0.5 min.
6	Add Pigment Emulsion as per shade requirement	1400/2800	1 min
7	Filter the paste with fine mesh (200 mesh if possible)	-	-

- **For dark shades**, After adding Pigment colours, Viscosity drop in the range of **20 to 25% is normal**. (except Black). This can be still higher with colours of non standard makes.
- To Compensate for this, it is suggested to make paste of 20% higher viscosity. This will avoid issues like **Poor feel and fastness, low coverage and production**.

Low gsm fabrics (< 100 GSM)	: 1 Side Printing	} Consult Zydex
	: 2 Side Printing	

IMPORTANT NOTE :

- Check **Binder pH** before adding Water.
- **Colour fastness and Paste Viscosity** will also depend on **quality of Emulsions**.
- R-66 Must be **added before addition of Zycoprint** (Thickener)
- **Add Fixer** in the pigment paste **at the time of printing** or use **2% - K2 Clear (T.G.)/ K2 Clear**.
- Add **Urea water** instead of adding Urea directly in the powder form. (take Urea powder & water in 1:1 ratio, use this urea water in the paste after proper filtration)
- **Addition of Ammonia helps to:**
 Improve **stability** of the paste. (because most of the thickeners are stable in alkaline condition)
reduce cost of thickener*. (*With Acidic Binders consumption of the thickener will go up.)
Dose will depend on **Binder pH**.
preventing fungal growth in Pigment Paste **during longer storage**.
- **Feel of the Print** will depend on **Paste Viscosity** and **“Back side penetration”** .This should be avoided when printing on one side

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BINDER ECONOMICS

Most of the Lower cost Binders available in the market have low active content/Polymer which leads to poor fastness. Hence it is advisable to test the Binders on Cost to cost basis.

E.g.

Binder Cost Rs. /Kg.(say)	% Dosage	Paste (Rs./ Kg.)
60	10	6
100	6	6

Compare fastness, feel etc. and then select the suppliers.

STORAGE & SHELF LIFE

- Do not store in direct sun or at a temperature exceeding 35°C.
- Always keep the lid closed after withdrawal of material from the can.
- After opening the container, please add 1 cm. layer of water for extended storage.
- Minimum shelf life of the product is 18-24 months. (Under ideal storage conditions)

DISCLAIMER

The information & data contained herein are given in good faith but without warranty. We recommend that before using our products, the customer should make his/her own tests to determine the suitability of the products for his/her own purpose under his/her operating conditions. As the circumstances under which our products are stored. Handled and used are beyond our control, we cannot assume any responsibility for their use by the customers.

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