

ZYCOPRINT

PRODUCT ATTRIBUTES

- **ZYCOPRINT** is a new generation eco-friendly (Restricted Substances List compliant, viz. APEO free etc.) polymeric thickener for aqueous pigment printing which has been designed to address following problems:
- **ZYCOPRINT** is **GOTS** certified thus can be used in manufacturing of organic apparel.

ZYCOPRINT pigment printing system will have following benefits:

- **Brilliancy:** The latest **ZYCOPRINT** system eliminates the blackish hue and dulling of the pigment prints.
- **Solidity:** Printing pastes made with **ZYCOPRINT** can cover the weaving imperfections especially in large blotches.
- **Feel:** The aqueous printing done with pigments in dark shades always gives harsher feel, which forced the printer to opt for reactive/solvent based printing. The latest version of **ZYCOPRINT** gives reactive like feel.

Thus it allows the printer to switch from reactive/solvent printing to pigment printing easily (without any increase in printing cost, reduced time, & eliminating pollution related to washing).

The retailers are interested in ensuring use of RSL compliant products along with safe & eco-friendly technology for the workers and society at large. The latest **ZYCOPRINT** allows you to achieve both the objectives.

SPECIFICATIONS

Appearance	Whitish Translucent Liquid
Bulk Viscosity	500 – 4000 cps @ 30°C

Based on the feedback of select group of consumers, comparison between traditional & existing technologies with new generation **ZYCOPRINT** is summarized below:

	Conventional Thickeners*	Solvent Based Printing	Reactive Printing	Zycoprint System*
Brilliancy	2	3	4.5	3
Solidity	2	3.5	3	4
Feel	2	2.5	4	3
Sub Total	6	9	11.5	10
Other printing criteria				
Eco Friendliness	3	1	1.5	4
Cost (Relative)	3	2	1	3
Processing Time (shortest)	4	5	2	5
Grand Total	19	17	16	22

*1 – Poor, 2 – Satisfactory, 3 – Good, 4 – V. Good, 5 – Excellent.

In addition to above, it also addresses two very important fabric related printing problems as explained below:

1. Backside Penetration (in Cotton):

If not controlled generates maximum value loss for the printer & the final retailer due to following:

- Lower Coverage (i.e., excess paste consumption/meter)
- Harsher Feel: making the end product not comfortable to end consumer.

ZYCOPRINT addresses these problems by achieving **surface printing** leading to higher coverage & hence softer feel.

2. Bleeding (on synthetics): Most of the water based thickeners lead to bleeding on polyester rich blends whereas ZYCOPRINT due to its 100% bound water gives **sharp printing**.

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:

Some printers make a single paste with 10 to 12% binder content & use this for all shades.

This will lead to problems as explained below:

	Light colors (upto 2%)	Dark colors (upto 6 to 8%)
Required binder % in paste with pigment to binder ratio of 1:2.5	5%	15 to 20% (avg.18%)
Actual Binder say 12%	+140% (Excess)	-33%(deficit)
Problems	Higher printing cost, Harsh feel	Poor fastness

*To optimize binder consumption following methodology is followed: prepare 2 types of pastes

Step	Paste for →	Pastel & Light shades (upto .2%)	Dark shades (upto 8%)
1	Take Water (<1000 ppm* TDS)	By diff (step 2 &3)	
2	Add Binder; (Zytrol 600) %	5	20
3	Add ZYCOPRINT(Thickener)	To get desired viscosity as given below	
	Total	100%	
	Note:	For medium shades, mixture of the two pastes can be used to get the desired binder to pigment ratio.	

Print paste viscosity will be approx.10, 000 cps as measured by Brookfield viscometer
(model: RVT, Spindle No. 5, at 20 RPM)

Additives (Optional):

Catalyst-MX (Fixer For Fastness)

(Melamine type – contains formaldehyde) : 1-2 % (OWP)

Catalyst KX (Fixer For Fastness)

(Formaldehyde free) : 0.5 to 1% (OWP)

R-55 : 1-2 % (OWP)

R-66 : 1 to 1.5% (OWP)

K2 Clear/ K2 Clear (T.G.) : 1 to 2% (OWP)

*Typically Pigment to binder ratio should be maintained between 1: 2.5 to get good fastness.

Note:

- After adding the pigment one can expect a viscosity drop in the range of 8-12% for dark shades (except black & red).
- To compensate for this drop it is desirable to make paste of 10 to 15% higher than required print viscosity.

Special Procedure for Black Pigment:

(Same as above, only pigment is added in step 2 followed by binder & thickener)

Step	Paste for →	Pastel & Light shades (Max. 2%)	Dark shades (Max. 8%)
1	Take Water (<1000 ppm* TDS)	By diff (step 2 &3)	
2	Pigment Addition	0.5 to 2%	8%
3	Add Binder; (Zytrol 600) %	5%	15%
4	ZYCOPRINT(Thickener)	To get desired viscosity as given below	
	R 55	1-2% (OWP)	
	R66	0.5-1% (OWP)	
	Total	100%	
	Note:	For medium shades, mixture of the two pastes can be used to get the desired binder to pigment ratio.	

Thickener Consumption will depend upon:

- Binder quality (% solid) and electrolyte content. For best results it is ideal to use Zydex binder (zytrol-600), which is compatible with our thickener. This will also give higher fastness.
- Print paste viscosity: Higher viscosity will lead to higher consumption
- Pigment Emulsion: Emulsifier, electrolyte content will affect drop in viscosity.
- Quality Assurance reg. consumption: Once the product is approved by the customer, it is recommended to keep 5-10 kgs sample in a sealed container for future reference/comparison of consumption in subsequent supplies.

N.B: Shake the container well while using the product from the container in case it has been stored for more than 6 months.

PACKING: 65/30 kg. HMHDPE Drum

STORAGE & SHELF LIFE

- Do not store in direct sun or at temperature > 45°C.
- Always keep the lid closed after withdrawal of material from the can.
- Stable for 6 months under normal conditions*, viz. (*if stored in shade at room temperature in a closed container).

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.