

Printing Thickener

- PR
- PR-40
- PR-50
- PR-1

Thickeners for Reactive dye printing.

BACKGROUND

Dedicated research and development has resulted in the introduction of a new range of starch based thickeners for reactive dye printing.

The use of the Printing Thickener PR SERIES allows the textile printer to produce prints with excellent color yield, levelness and sharpness. Reactive dyes are unique amongst all other dye classes. Reactive dyes will undergo a chemical reaction with cellulose fibers. This produces a covalent dye-fiber bond. Because of the chemical reactivity of these dyes, the printer is restricted in his choice of thickener. The applied thickener should not react with the reactive groups of the reactive dyes. Printing Thickener PR SERIES does not react with the reactive dyes and as such, is the first starch based thickener suitable for printing with reactive dyes.

Technical aspects of Printing Thickener PR Series

Appearance	:	off white powder
Solubility	:	cold water soluble
Purity	:	optimal
Ionic Character	:	anionic
PH	:	10-12
Screen blocking test	:	500g < 1 min (Estal PE 74)
moisture	:	10 %

Main Types

Item	5% concentration Viscosity (mpa.s)	Machine	Characteristic
PR-50	3000 --6000	Flat screen	Good levelness. Suitable for large blotch.
PR-40	8000—11,000	Rotary & Flat screen	All purpose thickener for many applications.
PR PR-1	14,000---17,000 20,000—25,000	Rotary screen	Mediun-High viscosity.

- Viscosity measurement : 25 °C 20 rpm NDJ-1

Packaging : 25 kg net in paper bag

ADVANTAGES OF USING PRINTING THICKENER PR SERIES

- Easy to prepare stock solution
- Good stability of paste
- No preservative
- Good rheology
- High color yield
- No screen blocking
- Good levelness
- Good sharpness
- Not electrolyte sensitive
- Easy Stock Preparation

PRINTING THICKENER PR SERIES dissolves very easily. A stock solution can be prepared by adding PRINTING THICKENER PR SERIES to water while stirring. Soft water is recommended or sequestering agent (sodium hexa-meta-phosphate) should be used. After adding the product, stop stirring and leave it for 4-24 hours. Stir again for several minutes and then it is ready for use.

- Good rheology

Like all other natural thickeners, PRINTING THICKENER PR SERIES is characterized by a Newtonian rheology. However, viscosity is influenced by temperature. An increase in temperature results in a decrease of viscosity.

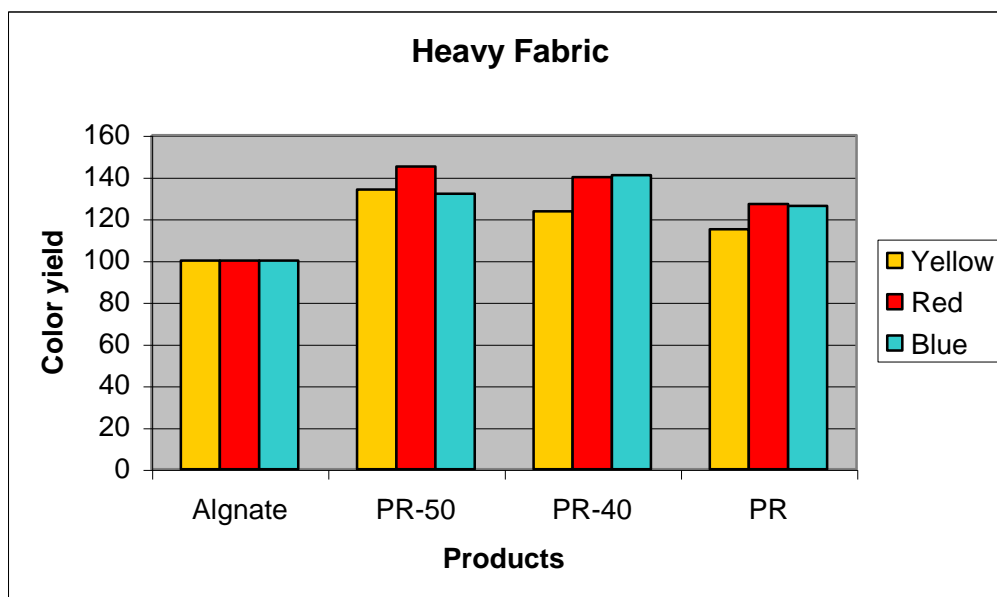
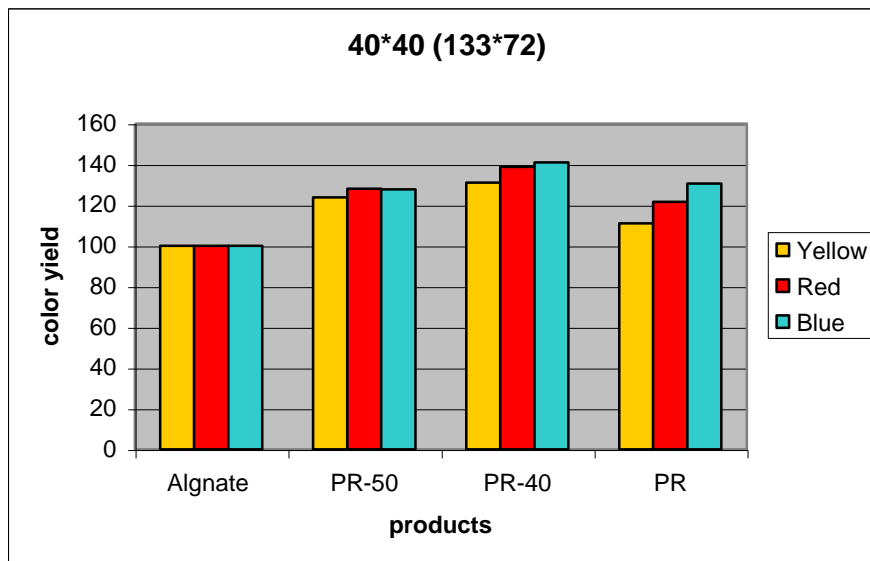
Table 1. Viscosity of PRINTING THICKENER PR SERIES measured with a Brookfield RVDV II as function of concentration at 25 °C , 20 rpm .

Conc. (%)	PR-50		PR-40		PR	
	Brookfield	HAAKE	Brookfield	HAAKE	Brookfield	HAAKE
3					850	830
4	1500	1600	2360	2000	2950	2600
5	4700	4000	5740	4750	8450	6500
6	12950	1000	12800	9500	21400	16000
7	28200	21000	32950	24900	40800	25000
8	69800	39000	65600	38000		

- Viscosity measurement : 20 °C 20rpm Brookfield RV DV –II
- High colour yield.

Compared with sodium alginates PRINTING THICKENER PR SERIES as printing thickener produces prints with higher color values. This increases in color value is observed on both cotton and viscose . In most cases the dye concentration can be reduced to match shades , yielding a cost reduction of dye cost . Reduce dye concentrations in the printing also lead to a decrease in the amount of unreacted reactive dyestuff in sullage effluent.

Table 2. Color value obtained for different dyes and comparing PRINTING THICKENER PR SERIES with sodium alginate. Dye stuff used are Ci-ba Turquoise blue P-T, and Wan De BPS Yellow and blue.



STEAMING

The optimum steaming temperature should be in 100-102°C . It should never be over 102°C . Relative Humidity 75 % is advised.

WASHING

Advised standard washing sequence

1 Rinse at low temperature (20-30 °C), overflows and spray are advised.

2 Treatment at intermediate temperature (50-60 °C), overflow and spray are advised. Recommended auxiliaries: 3 g / l complexing agent, 2 g / non-ionic wetting agent . In some case this stage can also include a following tank at 85°C

3 Treatment at or close to boil. Recommended auxiliaries : 3g/l complexing agent, 2 g/l non-ionic wetting agent. Add a little sodium hexametaphosphate to improve handle.

4 Rinse at 60-70⁰ and then again at 20-30⁰

Previous techniques and knowledge are summarized based on the latest research and developments. However, such information should not be used as an excuse for copyright infringement, nor as a violation guarantee (explicit or implied), while no guarantee of the suitability of the product, prospective purchasers need to do their own tests and research to confirm whether the product from Di Lin Chemistry (Shanghai) Co., Ltd is applicable to the clients specific application and to achieve the desired effect. Due to technical and practical application of the manufacturers conditions being widely varied, whether it is the case of the experimental nature of the case or the actual production, Di Lin Chemistry (Shanghai) Co., Ltd has no any responsibility to the consequences of the use of this product. Di Lin Chemistry(Shanghai) Co., Ltd does not guarantee to the purchaser that the use of this product will not infringe the patent of others.

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