#innovative
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Old dye solutions

Dyeing with BEZAPRINT pigments and
BEMAPLEX/BEMACID dyes on cellulosic garments

LAB 102

Blue veins of CHT

Product overview

Precationising agents

The precationisation provides for the affinity of the dye to the fibre and maintains the dye at the fabric surface, which is the basic condition for the desired “wash out“ effect. These precationsation agents are generally applied before dyeing with pigments or metal complex dyes. The challenges which have to be fulfilled are bath exhaust, levelness, colour brilliance and fastness properties.

	DENIMCOL FIX-GF	DENIMCOL FIX-FSN	DENIMCOL FIX-OS
	DENIMCOL FIX-GF is a precationisation agent with a very high charge density. The fabric becomes intensively dyed, especially in case of application in an alkaline medium.	DENIMCOL FIX-FSN is a precationisation agent of a very small molecular size, so that there is no risk for agglomerations with the dye. Best selection for dyeing with metal complex dyes and acid dyes on cotton garments to receive good wash-out effect and good home-laundry fastness.	DENIMCOL FIX-OS is a cationic polymer containing reactive groups similar to those of a reactive dye. DENIMCOL FIX-OS can thus be fixed on the fabric.
Application quantity:	3.0 – 4.0 %	2.0 – 4.0 %	4.0 – 6.0 %
Application parameter:	pH 9 with soda ash, rinsing between precationisation and dyeing	Without pH adjustment	After short pre-running phase: addition of 2-3 ml/l NaOH (38°Bé) for fixation on the fibre

Binder

Binders are applied after pigment-dyeing of precationised garments. Here the binder helps to further improve the link between the pigment and the substrate. The fixation of the dyes on the surface of the yarn by the binder help to improve dry and wet rubbing fastness, as well as the stability of the dyeing in home laundry washing cycles.

DENIMCOL BINDER GF-C is a soft anionic polymer binder based on acrylate. Drying and fixation in tumble dryer at 90 - 100°C. Particulary soft handle and improved bath exhaust.

Other dyeing auxiliaries

The dyeing procedures enclose a selection of further chemical auxiliaries. These products are included in the recipe to keep the results of the dyeing process consistent.

DENIMCOL LUB-BPA is a lubricant to improve the gliding of the garments to reduce creases and friction. This effect helps to receive level dyeings. DENIMCOL CDS is an auxiliary to reduce the foam inside the drum and accelerate the penetration of liquor into the fabric. DENIMCOL DIS-OL is a dispersion agent with excellent dispersing properties to dyestuffs and pigments.

Dyeing with Pigment dyes

Besides the unique look of pigment dyed garments these pigments can also be used in special effect applications with binders, in spray application or artisanal application methods.

2 bath precationisation and dyeing

Liquor ratio 1:8 - 1:10

A: Precationisation

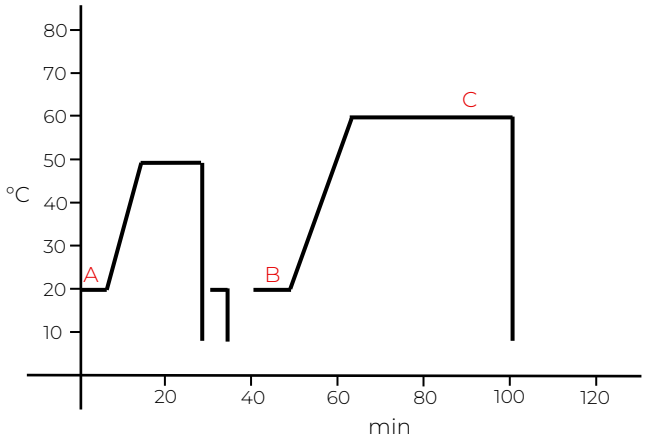
3.5 – 6.0	%	DENIMCOL FIX-OS
1.0 – 2.0	g/l	DENIMCOL LUB-BPA
		After short running, add:
2.0 – 3.0	g/l	NaOH (38°Bé)
		20 min at 50 °C
		rinse and neutralise

B: Dyeing

0.5 – 1.5	g/l	DENIMCOL DIS-OL
0.1 – 0.5	g/l	DENIMCOL CDS
x	%	BEZAPRINT pigments
		20 – 40 min at 60 °C

C: Fixation in the same or in the fresh bath

3.0 – 5.0	%	DENIMCOL BINDER GF-C
		15 min at 60°C
		hydroextract
		dry in tumbler at 90 - 100 °C



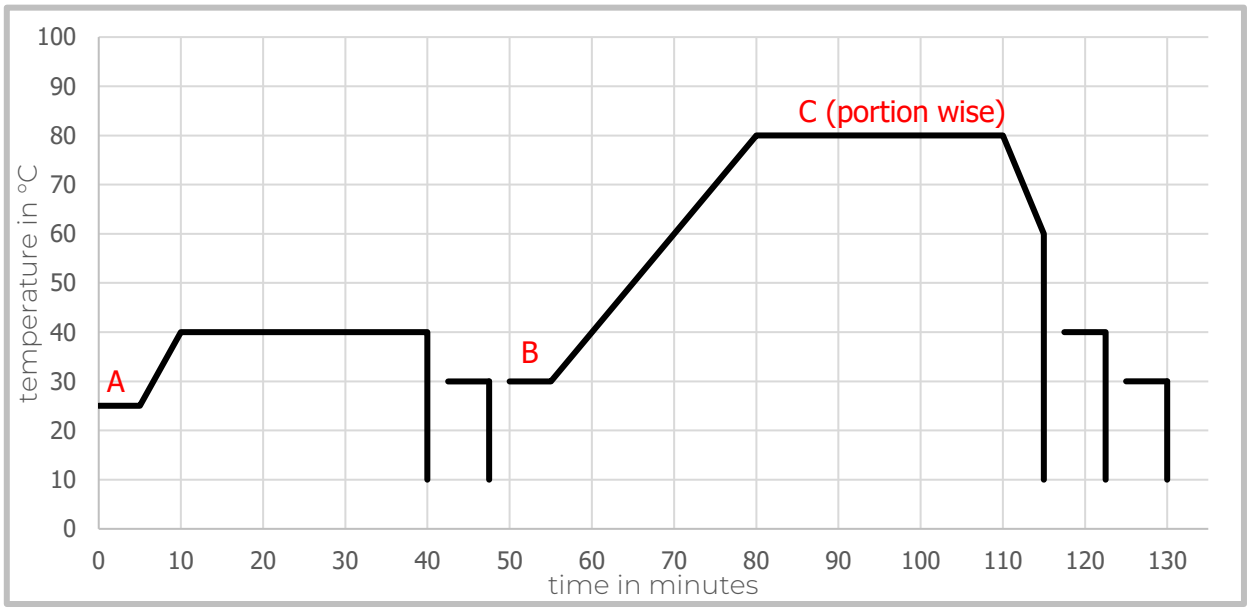
The main elements for garment dyeing:		
BEZAPRINT Yellow 3GT	BEZAPRINT Blue TB	BEZAPRINT Black DW
BEZAPRINT Violet FB	BEZAPRINT Grey BB	BEZAPRINT Red KGC
BEZAPRINT Green BT	BEZAPRINT Red SGR	BEZAPRINT Navy TR
BEZAPRINT Yellow RR	BEZAPRINT Blue RR	

More pigments and fluorescent pigments are available.

Dyeing with BEMAPLEX / BEMACID dyes

DENIMCOL FIX-FSN is the best selection for cationising the substrate for a metal complex dyeing finish. As the anionic metal complex and acid dyes don't have natural affinity to cellulosic fibres, the selection of an optimum precationiser is important as a bridge between the cellulosic fibre and the dye. DENIMCOL FIX-FSN proved to bind the dyes effectively to the surface of the substrate, so that a subsequent enzyme wash can create the strongest abrasion effects.

2 bath precationisation and dyeing



Liquor ratio: 1:8 - 1:10

A: Precationisation

2.0 – 4.0	%	DENIMCOL FIX-FSN
1.0 – 2.0	g/l	DENIMCOL LUB-BPA
		30 min at 40 °C
		Drain and rinse

B: Dyeing

X	%	BEMAPLEX / BEMACID dyes
		Heat from 30 °C to 80 °C in 20-30 min
		10 min at 80°C

C:

x	g/l	Sodium chloride (portion wise)
		10-20 min at 80 °C
		rinse at 40 °C and rinse cold

The wash-out effect can be controlled by a subsequent stonewash or biopolish treatment.

Fastnesses

The resulting fastness properties are strongly dependent on the material used and the process employed, in particular the enzymatic washing. The indicated fastness properties should therefore only be seen as guide values. All fastness properties should only be tested and evaluated at the end of all process stages.

Dyestuff elements	Conc. %	Fastness to light (ISO 105-B02)	Fastness to rubbing (ISO 105-X12)		Fastness to washing 40°C (ISO 105-C06/A1S)		
			dry	wet	CC	CO	PES
BEMAPLEX Yellow N-RN	2.00	3-4	4	2	3-4	3-4	3-4
BEMAPLEX Yellow M-T 01	1.70	4-5	4-5	2	4	4	4-5
BEMAPLEX Yellow D-4R	1.40	6	5	3	3-4	4	4-5
BEMAPLEX Orange D-R	2.40	4	4-5	3	3	4	5
BEMAPLEX Red M-T	1.20	3-4	5	2	3-4	4	4-5
BEMACID Blue F-2R	2.20	3	4-5	3-4	3-4	3-4	4-5
BEMAPLEX Navy D-RD	2.10	5	4-5	2	4	3-4	4
BEMAPLEX Olive D-GL	2.00	4-5	5	2-3	4	3-4	3-4
BEMAPLEX Brown D-BD	1.70	4	5	3	3-4	3-4	4
BEMAPLEX Grey N-BL	2.20	6-7	4	2	3-4	3-4	4
BEMAPLEX Black D-R	3.00	6-7	4	1-2	3-4	3-4	4

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