

'Strip' Your OBAs and Reactive Dyes without Embarrassment

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Introduction

The removal of colour from material that has already been dyed is termed 'stripping', in contrast to bleaching with the object of producing a white material from the natural state. Stripping is defined as any operation aimed at removing or destroying some or all of dye from the dyed textile yarn or fabric without damaging it.

Stripping of dyed fabric is carried out mainly either in order to utilise already dyed material or to correct a faulty dyeing or printing. Both operations are of considerable technical importance but the choice of method and the factors governing the stripping vary considerably.

When grey fabrics are taken to the finishing department, the aim is to produce a final product that is right-first-time and has no faults. However, the finishing process consists of many specific working parameters and the risk of producing faulty material increases, depending on these parameters. Stripping is one of the processes used in textile finishing to reproduce and repair these faulty materials. There is a definite need for a stripping agent that will attack the colours without damaging the material itself.

Generally, there are two types of stripping: (i) back stripping, used to reduce the depth of colour; and (ii) destructive stripping, used to completely remove or strip or destroy the dye from the dyed textile. Sodium dithionite and thiourea dioxide are the leading dye-stripping agents in the textile industry. Sodium dithionite is the most popular and is often used with

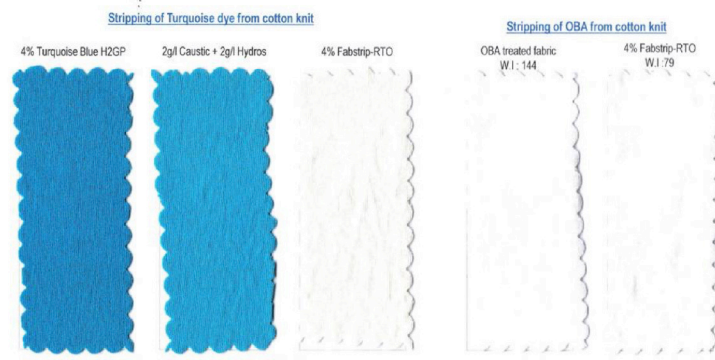


Fig. 1 : Stripping efficiency of Fabstrip-RTO on dyed and OBA knits

Recipe	4% Turquoise Blue H2GP	OBA knits
	% Colour strength	W.I.
Control	100	144
2% Fabstrip-RTO	2	84
4% Fabstrip-RTO	1	79
6% Fabstrip-RTO	1	72
2 g/l Caustic + 2 g/l Hydros	58	--

Table 1 : % Colour strength and Whiteness Index (W.I.) of dyed and OBA knits

sodium carbonate as a fire retardant.

However, the textile industry still suffers from many spontaneous fires and the concomitant emission of sulphur dioxide when the dithionite powder comes into contact with moisture. In spite of several problems and the fact that dithionite

powder is inefficient and unreliable, it has retained its standing as the preferred stripping and reducing agent.

The problem is aggravated and acute in case of stripping Turquoise blue shades and/or Royal blue shades. Worse still is the situation in stripping an Optical Brightening

Agent (OBA) from the fabric.

It is clear, therefore, that the industry needs a more efficient and more reliable stripping system that gives satisfactory colour removal.

Sarex has developed one such product, Fabstrip-RTO, which is especially recommended for stripping turquoise blue, reactive dyes and optical brightening agent from cotton. Fabstrip-RTO also strips various other classes of dyestuffs from the fabric.

Unique Features:

- Strips turquoise/blue and other reactive dyes & OBA; hence fabric can be re-dyed
- Complies with Oeko-Tex Standard 100, hence eco-friendly

Materials and Methods

Materials: 100% Cotton knits (RFD), 100% Cotton OBA knits

Chemicals: Fabstrip-RTO

Reactive Dyestuff: Reactive Turquoise Blue H2GP (4% shade)

Experimental

Dyed fabric was treated with 3-6% Fabstrip-RTO at 95-98°C for 30 min, keeping the M:L ratio at 1:15, followed by treatment with 2 g/l sodium thiosulphate at 60°C for 15 min, M:L 1:15, hot wash and cold wash. The same procedure is applied for stripping Optical Brightening Agents (OBA) from the fabric. Out of abundant precaution, it is recommended to add 1 g/l sodium nitrate during stripping in order to avoid fabric damage and machine corrosion.

Stripping of dyed fabric was also carried out with a conventional caustic-hydros system (ie. 2 g/l caustic + 2 g/l hydros) in order to get a comparison between conventional and Fabstrip-RTO processes.

Evaluation

The stripping efficiency of Fabstrip-RTO for dyed fabrics was analysed by comparing the Percent Colour Strength value of stripped fabric with dyed fabric and also by visual assesment. The stripping efficiency for OBA treated fabrics was analysed by determining

the Whiteness Index, using a Computer Colour Matching system.

Results & Discussion

Table 1 clearly shows that almost complete stripping of turquoise dye from the fabric was achieved, as the colour value dropped down to almost 1-2 with Fabstrip-RTO, while with a conventional caustic-hydros system, the colour value was 58, indicating incomplete stripping. Also it could be seen that the whiteness index of the OBA stripped fabric dropped down from 144 to 72-79, which is generally considered to be the whiteness index of ready-for-dyeing fabric. The stripping efficiency is again verified in Figure 1, where the dye and OBA were completely stripped.

Conclusions

Fabstrip-RTO is an efficient and effective stripping agent for reactive dyes, especially for Turquoise blue dye, and for OBAs from cotton and hence holds a promising position in the textile industry.

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