Sarex

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Saraquest

Exclusive Insight

SARAKOL-0472

Single bath Washing off Agent for Reactive Dyes (Darker shades)

Reactive dyestuff belongs to the group of dyestuffs widely used for dyeing/printing of cellulosic fibre. A number of reactive dyestuffs are sold and their product lines are diversified from conventional ones to high-tech products by discharge and resist printing processes. Reactive dyes are extensively used for colouration of cellulosic fibres because of their excellent wash fastness which arises from covalent bond formation between dye and fibre. However, up to 40% of the dyestuff may hydrolyze in the dyeing process; this hydrolyzed dye has affinity for the fibre via hydrogen bonding and Van der Waals interactions, but is not covalently bonded and as such exhibits poor wash fastness. Accordingly, these reactive dyeing require a multistep "wash-off" process after dyeing, involving various aqueous rinses and washings, in order for the dyeing to achieve the characteristic very high wash fastness. Deficient soaping often leads to bleeding, staining of white ground and re-deposition, resulting in insufficient wet and washing fastness. Setting of a high temperature seems preferable for removal, however, washed-off dyestuff often diffuses and penetrates into the yarn, resulting in re-adsorption and staining. What is required in soaping after reactive dyeing, therefore, is powerful soaping properties that can strike a balance between the removal of unfixed dyestuff and prevention of re-deposition.

A constantly growing world population requires an increasing quantity of fresh water, hence decreasing the consumption of water has become the most important subject in last years. Aware of the depletion of water sources, the textile industry has to develop new technologies that use less water. From a sustainable chemistry and engineering perspective, consumption of water and energy are arguably the biggest issues in textile dyeing.

In the field of dyeing, in keeping up with the demand for energy saving, shortening and reduction of steps and reduction in waste water load, there exists presently a strong need for a washing-off agent with a high added value whereby the shortening and reduction of steps, simplification of operation, superior dyeing quality may be achieved. Sarex has developed a new washing off agent, **Sarakol-0472**, which enables the removal of unfixed hydrolyzed reactive dye from the fabric in single wash unlike conventional washing off agents which requires multiple steps for complete removal of unfixed hydrolyzed reactive dye. The dispersing property in Sarakol-0472 helps to keep the washed off dye in disperse condition, thus not allowing it to re-deposit on the fabric.

Unique Features of Sarakol-0472:

- Good washing fastness achieved
- Final drain bath is almost clear
- Does not complex with dyestuffs
- Colour yield or tone is not affected

Experimental:

[I] To check the dispersion property of Sarakol-0472:

The dispersion property of Sarakol-0472 was evaluated by Carbon dispersion test. The dispersion property of Sarakol-0472 was checked "Immediately" and "After 8 hrs".

[II] To check the washing off efficiency of Sarakol-0472:

Reactive dyeing (8% shade) of cotton fabric was carried out with the below given recipe.

Recipe	1	2
Reactive Black GDN	8%	-
Reactive Yellow 145	-	2.50%
Reactive Red 180	-	5.50%
Glauber Salt	60 g/l	60 g/l
Soda Ash	20 g/l	20 g/l
Sarakol-RDL	1 g/l	1 g/l
Saracrease Conc(1.0%)	2 g/l	2 g/l

Sarakol-RDL: *Solubilising cum leveling agent for Reactive dyeing*
Saracrease (Conc): *Crease preventing agent*

Dyeing is carried out at 60°C for 30 minutes keeping the MLR of 1:8. After adding 20 g/l soda ash, dyeing is further continued for 90 minutes at 60°C followed by drain. Below after treatment steps were followed after draining the dye bath:

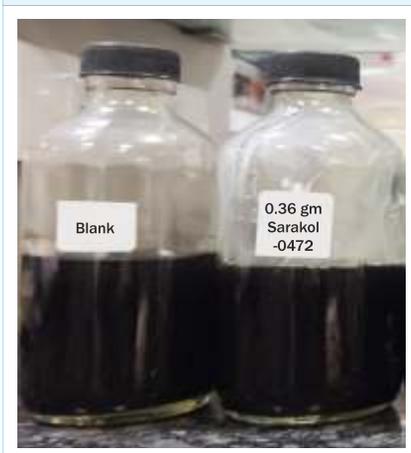
- Cold wash 10 min. and drain
- Neutralize with acetic acid. Make bath pH 6 - 7, raise the temperature to 60°C for 10 min. and drain
- Carry out soaping with 0.35 g/l Sarakol-0472 at 98°C for 15 min. and drain
- Hot wash at 70°C for 10 min. and drain
- Cold wash for 10 min. and drain

Test method:

The soaping efficiency of Sarakol-0472 is evaluated by performing washing fastness of the soaped fabric. The washing fastness is performed by using standard test method ISO 105 C10.

Results:

[I] Carbon Dispersion Test

Immediate	After 8 hrs
	

From the photographs, it is quite evident that Sarakol-0472 posses excellent dispersing property which is one the prime requirement of an effective washing off agent.

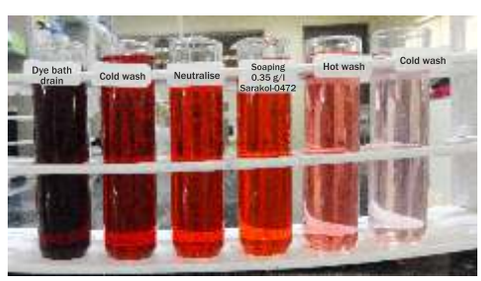
[II] Washing off efficiency of Sarakol-0472:

1. Washing fastness of the soaped fabric : Colour fastness to washing - ISO 105 C10:

	WO PAN PES PA CO ACE	
		Blank
		0.35 g/l Sarakol-0472
		Blank
		0.35 g/l Sarakol-0472

ACE : Acetate, CO : Cotton, PA : Nylon, PES : Polyester, PAN : Acrylic, WO : Wool

2. Drain bath images after each rinse:

Soaping carried out with 0.35 g/l Sarakol-0472	
Dye : 8% Reactive Black GDN	**Dye : 2.5% Reactive Yellow 145 + 5.5% Reactive Red 180**
	

The final cold wash rinse is clean and clear which proves the efficiency of Sarakol-0472

3. Bulk trial taken with Sarakol-0472:

Drain bath images after each rinse		
		
Soaping bath (Sarakol-0472)	**Hot wash**	**Cold wash**

The final cold wash rinse is clean and clear which proves the efficiency of Sarakol-0472

4. Bulk trial taken with Sarakol-0472 on Reactive dyed yarn:

The reactive dyed yarn is soaped with Sarakol-0472. The soaped yarn was dipped in water and checked for any bleeding taking place. As clearly seen from the photograph, the water is absolutely clean which justifies the washing off efficiency of Sarakol-0472.

FLUOROFIX-877

Fluorescent Acid Dye Fixing Agent

Dye fixing agents are of considerable interest in the art of textile colouration. Dyed and printed fabrics often have unsatisfactory wet fastness, especially washing and water fastness. Acid dye and polyamide fabric forms an ionic bond or the electrostatic bond. The bonding is relatively weak and can lead to problem of wash fastness. A variety of fixing agents are known for application to polyamide fibre to improve wash fastness of dyed/printed fabric. These agents are typically compounds of low molecular weight polymers with anionic groups which can associate with the nitrogen-containing groups of the polyamide polymer and form a surface layer.

Neon-colored clothing and fashion are back from the 1980s and in a big way. The vibrancy and brilliance of neon colours makes them stand out with certain shades providing an extra measure of wearer safety OR a bold fashion statement.

Neon coloured clothing in work wear are generally termed as High visibility clothing. High visibility clothing makes the wearer more obviously visible to vehicular traffic and make them stand out against their background environment. Highly visible fabric such as orange or yellow neon's and retro-reflective tape are commonly used. These are the uniforms of those who work in construction, road work, and other occupations.

As far as neon clothing in fashion is concerned, neon has commonly felt like an aggressive colour to wear. Some of the brightest and boldest neon colours of the season include pink, blue, yellow, orange and green.

The term “neon colours” comes from a special property of neon gas produced by neon lighting called fluorescence. Fluorescence, of course, is not limited to exotic lighting or neon gas. Neon dyes can emit intense visible light upon exposure to ultraviolet light. This is what gives these dyes the ability to appear so vibrantly bright when compared with non-fluorescent dyes. Dyes can be bright, but neon dyes are bright and fluorescent.

When it comes to dyeing fabrics with neon dyestuffs, many challenges arise. The major issues involves with the pH during processing and the fastness properties of the dyed fabrics. The various fastness properties viz., washing and wet fastness properties are difficult to control with various fluorescent dyes. Specific fixing agents are required to achieve good colourfastness as most of the conventional fixing agents will destroy the fluorescence of fabric.

Solutions from Sarex:

Sarex has specially developed a dye fixing agent "**Fluorofix-877**" for Fluorescent acid dye stuffs which will retain the fluorescence of the dyed fabric while improving the wash and wet fastness properties. Below are the unique features of Fluorofix-877 which meet the requisite of customers for improved fastness properties.

Unique Features of Fluorofix-877:

- Dye fixing agent for fluorescent acid dyes
- Does not affect the fluorescence of fabric
- Improves wet fastness properties viz., Water contact fastness, Perspiration fastness and Sea water fastness
- Compliant with eco parameters - Complies with REACH/SVHC, Oekotex-100

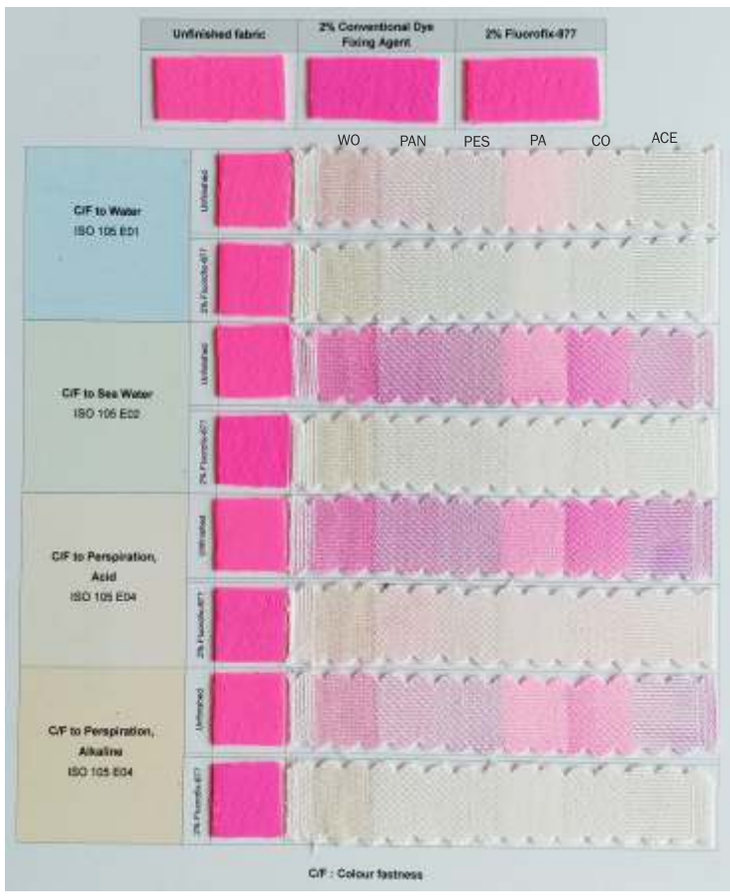
Recommended procedure for Fluorofix-877:

Fluorofix-877	: 1 - 2% o.w.f (for light medium shade)
Fluorofix-877	: 2 - 4% o.w.f (for medium to dark shade)
MLR	: 1:10 OR 1:20
Temperature	: 70°C
Time	: 20 min

Results:

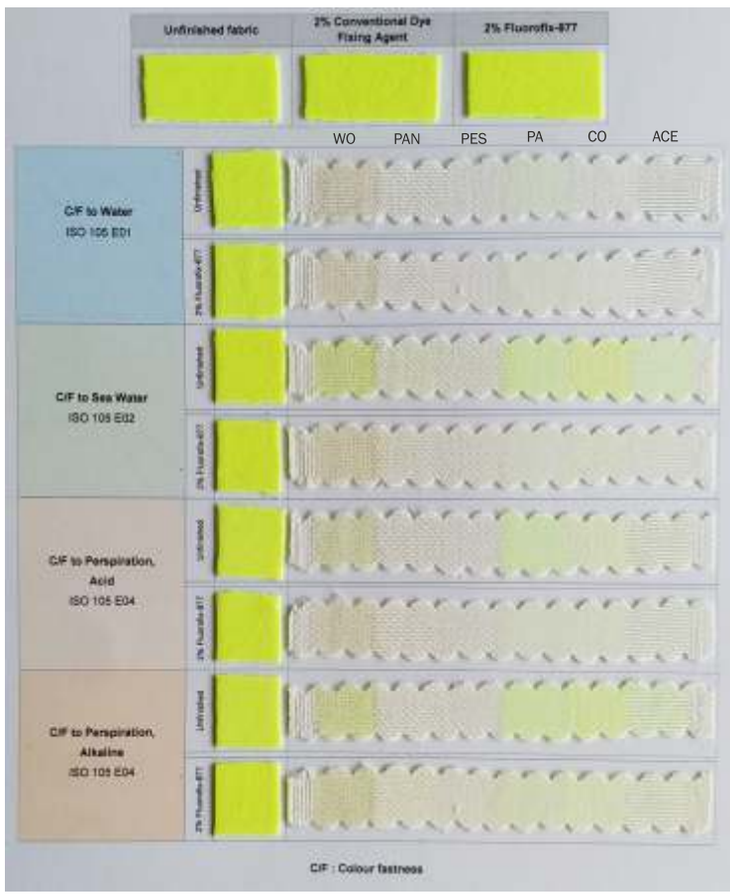
Performance of Fluorofix-877

On Fluorescent Pink Acid dyed fabric



Performance of Fluorofix-877

On Fluorescent Yellow Acid dyed fabric



ACE : Acetate, CO : Cotton, PA : Nylon, PES : Polyester, PAN : Acrylic, WO : Wool

It is evident from the above photographs that Fluorofix-877 does not destroy the fluorescence of the fabric. Also it shows excellent improvement in the washing and wet fastness properties.

DENIBLOCK

Resist Effect On Indigo Denim

Denim, a strong and durable fabric, is a type of cotton twill textile known for its use in blue jeans and other clothing. Once upon a time, denim was worn only as working wear, but now it is widely used as a fashion wear. Denim fabric became popular at first among people of western countries and then gradually all over the world. Fashion today is incomplete without denim. It is a symbol of modeling and modern culture. Denim has risen to be a fashion icon and is being adorned by fashion models. Young generation mostly depends on denim clothing and denim based garments.

Denim became most popular for its special finishes and different washes. Denim washes is an important textile operation for adding value to denim/jeans fabrics and making them attractive to younger customers, particularly by equipping them with a faded or worn fashion look. Now different types of fashionable clothing for all types of people are made by different types of denim fabric. A number of technological factors have contributed to making denim the fashion icon that it is today. One of the most important parts of creating beautiful denim jeans is washing. Washing has such an important part in the denim chain because of the umpteen effects that consumers look for in their jeans. Different looks and varying hues can be achieved on the same raw denim fabric with different wet processes.

Consumer's need for new products is unlimited. So, to meet this essential demand, the fabric designers and manufacturers were obliged to produce different types of denim. At present, hundreds of derivatives of denim are available. Also new types of denim products are being developed.

Looking at the present demand for novel effects on denim, Sarex have developed a new product **Deniblock** which imparts resist effect on denim fabric.

Mechanism of Action:

Deniblock, wherever applied on the fabric, will resist the bleaching action of $KMnO_4$. The resisted portion will appear blue whereas the rest portion of the fabric will appear lighter as a result of bleaching thereby giving a unique resist effect onto the fabric.

Unique Features of Deniblock:

- Deniblock is a product developed to achieve resist effect on Indigo dyed denim fabric/garment.
- One can achieve various novel effects on Indigo denim fabric/garment with this product.
- It is a kind of value addition to the garment.
- It is applicable by spray, stencil, brush etc. It is also applicable by printing method.

Recommended procedure for Deniblock:

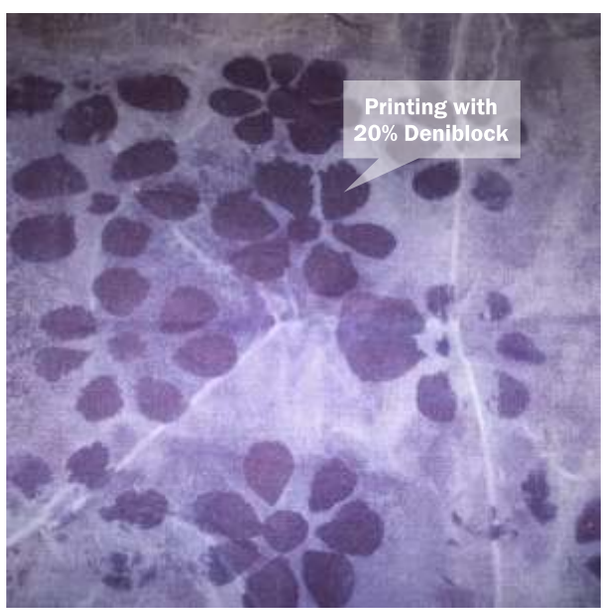
Deniblock application by Spraying:

- Prepare 15-20% solution of Deniblock
- Spray it as per the design requirement. Dry it at 130°C for 2 min. (for complete drying)
- Bleaching with 5 g/l $KMnO_4$ at room temperature for 10 min.
- Drying
- Wash with 0.5-1% Helar (Conc) at room temperature for 10 min.
- Cold wash and dry

Deniblock application by Printing:

- Prepare the printing paste with 15-20% Deniblock with suitable thickener
- Print and dry at 160°C, 1 min. (for complete drying)
- Bleach the printed fabric with 5 g/l $KMnO_4$ at room temperature for 10 min.
- Drying at 60°C for 30 min.
- Wash with 0.5-1% Helar (Conc) at room temperature for 10 min.
- Cold wash and dry

Performance of Deniblock

By Spray Application	By Printing Application
	
Spraying with 15% Deniblock followed by $KMnO_4$ bleaching	Printing with 20% Deniblock followed by $KMnO_4$ bleaching

Sarex

Sarex stands for quality products!

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