Esoteric and Aesthetic Finishes on Textiles

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In the era of consumerism, 'Give me more!' is the chant of young professionals who are flush with money. With not-so-conservative lifestyles, where business and pleasure are pursued with same zeal, this young generation always demand something extra in fulfilling their basic needs. Thus, for those who work hard and party harder, designer garments, loaded with features, are the 'in thing'.

These garments, apart from offering the required properties of hand, drape, wrinkle-free and colourfastness properties, also pack additional features such as an anti-odour finish, mosquito-repellent finish, skincare finish, etc.

We at Sarex focused on these requirements and developed a totally new range of finishes to meet insatiable demand of this market segment. While developing such finishes, the emphasis was on using, as far as possible, natural ingredients that are environmentally friendly, skin-friendly and long lasting. In some formulations, we adopted the technique of gradual release of active ingredients. Care is also taken that these esoteric finishes do not interfere with normal finishing chemicals, but in fact complement their performance. Some of these new finishes are described below.

a. Anti-Odour Finish: People invariably visit bars and smoky areas, to come back home with their clothes reeking of cigarette smell. Bad odour on fabric is also caused by sweat. The main components of bad odour are usually ammonia, tri-methyl amine, hydrogen sulphide, methyl-mercaptan, formaldehyde and acetic acid. Sarasmoke-INH eliminates offensive tobacco odour by selectively neutralising odour-causing constituents in cigarette smoke. It is suitable for all apparel fabrics, as well as home textiles like upholstery, blinds, carpets and floor mats, and is fast to home laundering.

b. Mosquito-Repellent Finish: Mosquitoes are a big menace to modern-day society. Malaria caused by mosquito bites kills more people in the world than any other disease (Fig.1). An effort to treat fabrics with a mosquito-repellent finish was the urgent requirement of the day. Saraguard-MOSQ was introduced in this perspective. The treated fabric repels mosquitoes by the following twin mechanism.
(i) Stimulating the odour sensors of the insects to repel them from their target.
(ii) Stimulating the touch sensors of the insects to repel them after contact but before beginning their blood-sucking action.
The active ingredients of Saraguard-MOSQ are in a microencapsulated form and the effect of the finish can be tested by the 'Modified Excito Repellency Test Chamber', prescribed by World Health Organisation.

Figure 1

c. Anti-Microbial & Anti-Dust Mite Finish: The human body generates weat during various conditions of activity leading to sensory excitation and thermal excitation. The bacterial contamination of sweat results in a foul smell, which can generate from various parts of the body, such as the armpit, forearm, back or forehead (The total surface area of skin for an adult is approximately 1.6 square metres). As a result of the above, textiles like socks, underwear, bedding, workwear, towels, formal wear, etc, are prone to microbial attack. Similarly, dust mites make their home in bed sheets, carpets, curtains and upholstery fabric.

Their presence cannot be detected by human eye (Fig.2), as they are microscopic insects, which proliferate in pillows and bed sheets, where shed skin scales and body-fluid stains are available as food. These can enter the nose and mouth of human beings during breathing and, being so

Figure 2

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small, they can occupy the alveoli of the lungs, leading to an allergenic reaction and, in certain cases, asthma.

Saracide-TGM, based on an organic product, has the capacity to eliminate the above microbes and dust mites and is clearly effective on Aspergillus Niger, Penicillin Cirrinium, Staphylo Coccus Aureus, MRSA (methicillin resistant staphylococcus alvadus) and Escherichia Coli. Hence, fabrics treated with Saracide-TGM have protection from microbes and dust mites. This protection is fast to home laundering.

d. Wicking Improver: Global retailers across the world are insisting that processors present fabrics that exhibit good moisture-transport and water-absorbency ratings. Sarasoft-MRM and Sarawick-PSR have been developed to meet these challenges. They are applicable on various substrates and improve water wicking and spread on the fabric surface by 60-70%, over untreated substrates. This results in the realisation of desired properties such as rapid dry with cooling effects and static dispersion. These finishes allow a wicking height of more than 15cm in 30 minutes. Sarawick-PSR exhibits excellent soil-release and stain-release properties to polyester and blends, with durability of 20 home launderings.

e. Rubbing Fastness Improvers: The crock fastness of dyed and printed polyester, microfibres and emerised or micro-sanded dark-dyed cotton fabric after chemical finishing is generally suspect. Buyers everywhere put pressure on processors to improve the dry and wet rub fastness by at least 1 to 1.5 units, in order to get their consignments approved. Sarafinish-WRB can dramatically improve the rubbing fastness of fabrics as it forms a durable, protective film on the treated fabric, which resists abrasion during rubbing. An electron micrograph (Fig.3) of treated and untreated fabric illustrates the effect on dark-dyed cotton fabric where, the dry and wet rub fastness improves by at least 1 to 1.5 units.

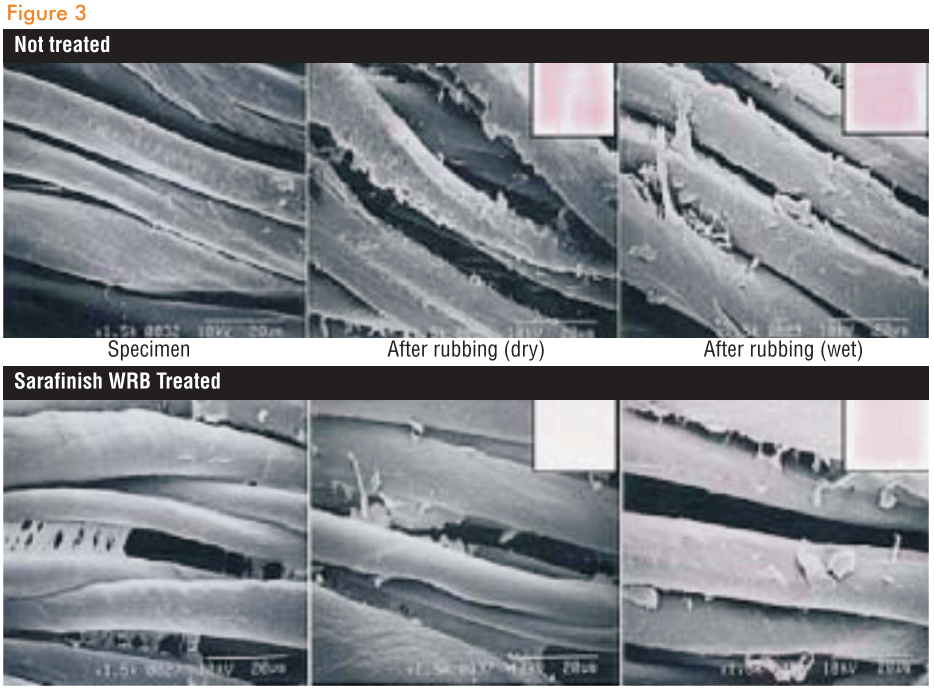
f. Pilling Improver: Antipil-65 and Antipil-1000 are new anti-pilling agents, designed to prevent pill formation in all types of woven and knitted fabrics, especially in micro-polyester and polyester blends. They give durable anti-pilling properties and exhibit pilling improvement by 1 to 1.5 units when tested by the Martindale abrasion test method. The product enhances anti-static properties and has no negative influence on shade or fabric handle. The product is compatible with conventional finishing chemicals used in textile finishing. The product also improves anti-slip and anti-snag properties.

g. Skincare Finishes: Skincare, which was once the preserve of the cosmetics industry, has entered a new dimension. Textile fabrics can be treated with some of the active ingredients of these cosmetic agents, which are derived from natural sources like plants, flowers or fruits and applied in a microencapsulated form, to provide durability. These finishes help in anti-inflammation, skin whitening, anti-oxidation, anti-wrinkle, anti-ageing, as well as moisturising.

(i) Saracare-SQ - Natural Oil Finish

An excellent skin conditioner and softening agent, based on natural substances and cosmetic ingredients with significant improvement in skin moisturising, anti-ageing and skin-conditioning effect. This multifunctional skin conditioner is based on a refined and chemically stabilised product, which is not only used as health supplement, but also an important ingredient in cosmetics, medical ointments and other topical creams. It has excellent skin penetration, spreads easily and moisturises the skin. The product also imparts a natural, soft, dry and silky feel to the substrate. It is recommended for sportswear, leisurewear, infant-wear and intimate-wear.

Figure 3

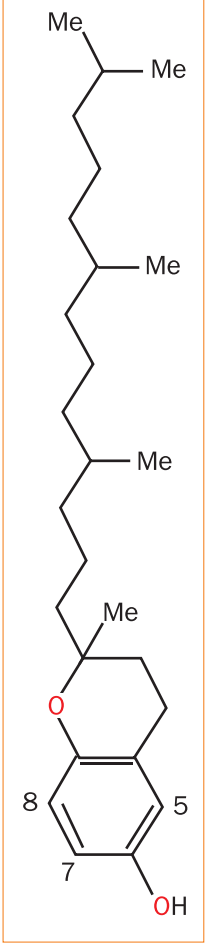


(ii) Saracare-VE - Vitamin-E Based

(Fig.4)

This is a natural skincare and healthcare finishing agent for application on natural fabrics and their blends with synthetics. It is principally based on Toko-phenol acid, which is an important cosmetic ingredient with excellent anti-oxidation, bio-membrane stabilisation and enhanced promotion of blood-circulation properties. The principal component is an active ingredient in health supplements, cosmetics, medical ointments and skincare agents. It reduces the ageing effect in skin by scavenging free radicals. It is an

Figure 4



excellent anti-oxidant with high skin safety.

(iii) Saracare-AV – Based On Aloe Vera (Fig.5)

This is a skincare softening agent, consisting of natural substances, safe for the skin with excellent moisture-retaining properties. It is an important ingredient in cosmetic, medical and skincare preparations, exhibiting excellent moisturising properties for skin, resulting in enhanced skin texture and an anti-wrinkle effect.

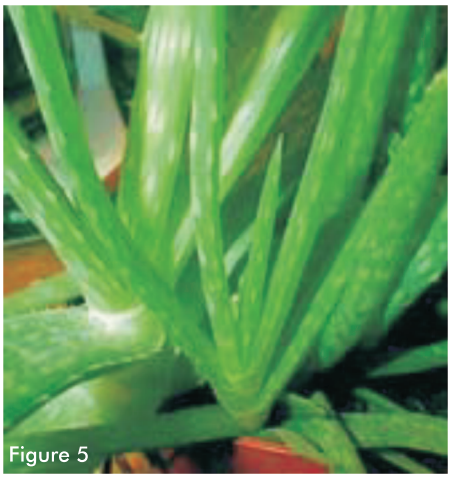


Figure 5

(iv) Saracare-MU – Based On Natural Protein

A unique amino-acid-based skincare agent, extracted from naturally occurring protein. It exhibits excellent moisture and heat-retaining properties and imparts a full, silky hand, which is durable in multiple washing cycles. It is recommended for workwear, casual apparel, inner-wear and infant apparel. It is suitable for application on polyester and polyester/cellulosic blends.

(v) Saracare-MC – Based On Natural Protein

This is an excellent moisturising, skin-softening and conditioning agent, based on a natural high-molecular-weight protein as its principal component. Such protein generates amino acid when activated by atmospheric contact with β-rays present in environment. This amino acid has a structure and shape similar to the nuclei of human skin. The principal component of this product is an important ingredient present in all skin moisturising, conditioning, anti-ageing and texture-improving products. In addition to medical ointments and cosmetics, the product imparts the following skin enhancing properties:

- Excellent texture with moisture retention
- Good anti-wrinkle effect with soft, supple and moisturised skin.

Fabrics/garments treated with this product exhibit enhanced moisture retention coupled with excellent softness. The durability of the product can be enhanced by using cross-linking resin along with it.

h. Cool-effect: Designed for the activewear or sportswear fabric, where the wearer requires good water evaporation when generating sweat due to various activities. As soon as perspiration is generated and comes in contact with Saracool-ETM-treated fabrics, a chemical is released and heat is absorbed from the skin, leading to an immediate cooling effect. Apart from the cool-effect, Saracool-ETM can be synergistically used with soil-releasing agents to improve wicking, water-absorption and soil-release properties.

With the above smart properties on textiles, the consumer now has a lot more choice to select from according to his/her lifestyle.