

MÉLANGE YARN– AN OVERVIEW

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Abstract : Color plays a significantly important role in the world in which we exist. Color can influence thinking, change actions, and cause reactions. It can irritate or soothe your eyes, raise your blood pressure or suppress your appetite. When used in the right ways, color can even save on energy consumption. Color also play very important role in fashion industry. Mélange Yarns are a dramatic and innovative mix of different types of fiber to create magical textures in the resultant fabric that is woven and knitted from it. Mélange yarns are popular due to their very attractive and unique fabric appearance which makes it much popular and rich in look..Mélange yarn is widely used in warp and weft knitting machines, various V-bed knitting machines, and winding machines. Mélange yarn is applicable to underwear, textile, casual wear, sportswear, shirts, business suites, socks and all sorts of cloth products, as well as bed linens, towels, decorative fabrics and other home fabric products In this paper various types of Mélange Yarn has been described which may be familiar to the end user.

Keyword: Mélange Yarn, sportswear, shirts, business suites, socks, etc.

I. INTRODUCTION : COLOUR AND ITS IMPORTANCE

Color plays a vitally important role in the world in which we live. Color can sway thinking, change actions, and cause reactions. It can irritate or soothe your eyes, raise your blood pressure or suppress your appetite. When used in the right ways, color can even save on energy consumption.¹

Color theory is a set of basic rules and definitions that help us understand how colors behave and interact. The starting point of color theory are the three primary hues – yellow, red, and blue, which mix to create secondary and tertiary hues. These twelve hues – three primary, three secondary and six tertiary colors – form the basis of the color wheel, which can be used to explore color relationships.

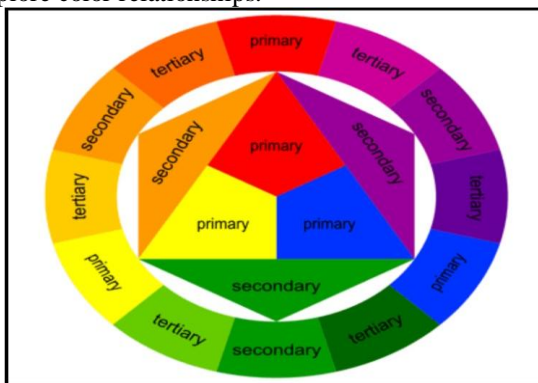


Fig. 1 : The Colour wheel

The color wheel contains pure hues – i.e. colors with no addition of white, gray or black. The essence is this – one can modify each hue from the color wheel by mixing it with white, black, or both:

All the colors we are capable of making – and seeing – together form the color spectrum.²

History of yarn manufacturing draws attention to the earliest days of the 19th century, when practically this was made possible by Ring Spinning. After this many developments have been made in terms of technology and improved process techniques have been adopted for the most efficient and convenient method of yarn manufacturing. Yarn is a long continuous length of interlocked fibers, which may be used in various applications depending upon the intended end use.³

II. MÉLANGE YARN

A yarn made from a mixture of variously colored fibers (cotton, synthetic fibers, wool). The fibers are blended in special rooms in which dampened textile fiber is laid out and on the delivery lattices of opener-picker machines. The semifinished products are blended in one of several shops of the spinning mill. The laps are mixed on the lattices of scutchers; the slivers, on carding engines, sliver lap machines, or drawing frames; the roving, on roving frames or spinning machines. The fiber is usually dyed before spinning. Natural-color fibers are also used. Fabrics made with Mélange yarn are called mélange fabrics.



Fig. 2 : Mélange Yarn made Fabric

Viscose or Rayon fiber is one of the oldest and most popular fibers commercially used worldwide. The best thing about the fiber is that it's made from organic sources and includes no proportion of synthetic elements. The viscose yarns are created using cellulose base. Viscose yarns have high tensile strength and they retain the colors pretty long. The viscose

yarns are hugely used in the textile industries, especially for the knitting and crocheting tasks.

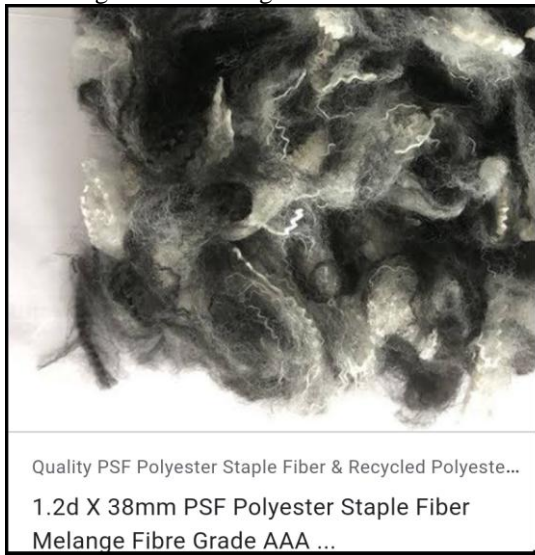


Fig. 3 : Polyester Staple Fiber Mélange Fibre

Since the 19th century, the commercial yarn manufacturing is known to everyone. Earlier, there was a handful of traditional techniques for yarn manufacturing that used to take a hell of a time. Nowadays, a selection of cutting-edge technique and equipment is available to rev up the production and shoot up the sales.

Mélange or dyed yarns are the yarns that are made by combining multiple fibers. These fibers can be of same or different colors or types. Dyed and raw fibers are present in the mixture. The viscose fiber Mélange yarns are very durable yarns with enduring brightness. These are available in a range of shades. The fibers mixed to create the Mélange yarns can be 100% pure or blended. Usually, the cotton fibers are blended with either polyester yarns or viscose yarns to create Mélange yarns. 5

Mélange yarn may be defined as “the yarn produced by the combination of at least two or more than two fibers”. Conventionally, the term Mélange is used for such yarns which are produced by the combination of two fibers (whether of same type but different in color or type of fiber used is different). In case of cotton Mélange yarn, a Mélange yarn is the yarn which is produced with various combinations of raw white and dyed cottons or dyed fibres. For example, if we mix 99% raw white cotton and 1% dyed cotton (of any colour), then it will be called Mélange yarn.

Mélange yarn is an innovative mix of different types of fiber to create magical textures in the resultant fabric.

III. TYPES OF MÉLANGE YARN

The term mélange is used for such yarns which are produced by the combination of two fibers (whether of same type but different in color or type of fiber used is different). Mélange yarn can be classified into two of its very basic types: namely Blended Mélange Yarn: and Non-Blended Mélange Yarn.

Furthermore, mélange yarn can also be classified as , Triblending (P/V/C) mélange yarn: , Fancy mélange yarn, Embroidery Mélange Yarn, Modal Mélange, Modal/Cotton Combed Mélanges, Viscose Mélanges yarn, Acrylic Grey

Mélange Yarns, Acrylic Grey Mélange Yarns etc.

Blending mélange yarn 6-7:

Such type of yarn in which different fibers are mixed/blended together in a certain fixed ratio for instance PC (Polyester: Cotton blend) 50:50, PV (Polyester :Viscose) 80:20, CV(Cotton :Viscose) 60:40 etc.6



Fig. 4 : Blending mélange yarn

Non-blending mélange yarn 6-7:

Yarn in which there are no different fibers blended together, but different coloured fibres of same type are used to make the yarn e.g. 100% cotton dyed yarn, etc. 6



Fig. 5 : Non-blending mélange yarn 6

Furthermore, mélange yarn can also be classified as ,

Triblending (P/V/C) mélange yarn: :

In this type of yarn in which three different fibers are mixed/blended together in a certain fixed ratio for instance PCV (Polyester: Cotton: Viscus blend) 33:33:34. To create that coveted heather look, the fabrics work together with the dye. Polyester, a synthetic fabric, absorbs a different type of dye than cotton and rayon, which results in a textured, dual-colored dye.



Fig. 6 : Triblending (P/V/C) mélangé yarn

Fancy mélangé yarn ⁸:

Fancy mélangé which has ultra variable types of Neppy, now, Grindle, Magic, Streaky, injection, and linen blend mélangé yarn.

Fancy yarns are also termed novelty yarns, specialty yarns, effect yarn



Fig. 7: Fancy mélangé yarn

Embroidery Mélangé Yarn :

Yarn is produced by spinning raw fibers of cotton or other materials to produce long strands suitable for use in the production of textiles, and Embroidery. ⁹



Fig. 8 : Embroidery Mélangé Yarn

Modal Mélangé yarn

Modal is a wood pulp based cellulosic fiber, made out of pure wooden chips from the beech tree. ¹³



Fig. 9 : Modal Mélangé Yarn

Modal Mélangé yarns are produced by mixing colorful modal fiber in blow room process with demanded Mélangé grade. Different grades of Mélangé can be produced with each color. The final goods which are made from modal Mélangé yarns have a perfect appearance thanks to all superior peculiarities of modal and superior performance. ¹²

Modal/Cotton Combed Mélanges yarn

Modal/cotton combed Mélangé can be produced from colors which produces modal/Mélanges. ¹²



Fig. 10: Modal/Cotton Combed Mélanges yarn

Viscose Mélanges yarn ¹⁸

Viscose Mélangé yarn is produced by mixing colorful viscose fiber in blow room process with demanded Mélangé grade. Different grades of Mélangé can be produced with each color.



Fig. 11 : Viscose Mélangé Yarn 17

Grey Mélange Yarns¹²

Grey mélange yarn is a special type of yarn and the fabric which is made from grey mélange yarn is also special.



Fig. 12 : Grey Mélange Yarn 16

After dyeing, grey mélange yarns are used for producing woven and knitted fabrics. Below is the process through which grey mélange yarn is dyed –

1. Firstly, carrier and vessel should be washed by hydrosol and caustic at 1000 C for 20 min
2. Next, load the package in the carrier and feed the vessel
3. Add wetting agent, anti-foaming agent, sequestering agent and run at 600 C for 10 min
4. Drain the water solution
5. Add wetting agent, sequestering agent, caustic soda, hydrogen peroxide, optical brightening agent and run at 900 C for single yarn and 1000 C for double yarn for 40 min.
6. Again drain.
7. Add peroxide killer and run at 900 C for 10 min.
8. Check peroxide in the package.
9. Drain again
10. Add washing chemical and run at 900 C for 20 min.
11. Wash the sample and check.
12. If it is ok, then continue.
13. Drain again.
14. Rinse for 10 min
15. Add fixing chemical and half acetic acid, run at 500 C for 20 min
16. Add softening agent and rest half acid, run at 600 C for 20 min.
17. Now check the finished sample
18. All is ok.
19. Drain

Acrylic Grey Mélange Yarns

Acrylic grey Mélange yarn is acrylic yarn black and white raw materials blended.



Fig. 13 : Acrylic Grey Mélange Yarn

Acrylic grey Mélange yarn can be used to make hats, scarves, gloves, sweaters. Acrylics are short fibers, and short fibers are easy to pill. Therefore, the poor quality acrylic fabric used.

IV. FEATURES OF MÉLANGE YARN^{6, 12}

Environmental Friendly: Mélange yarn is a yarn dyed product, which means that part of the fibers are dyed before mixing into the raw fibers for spinning. Mélange yarn processing can save around 50% water compared to the conventional processing of spinning before dyeing.

Fashion: Mélange yarn can present multiple colors on one single yarn, which gives it rich colors, slenderness and tenderness. Textile made of mélange yarn has a certain ambiguous cyclical effect.

Technology: Mélange yarn has unique dyeing process, and is highly technological in terms of fiber dyes, color matching, and mixed textile of multiple fibers.

V. COMMON PROBLEMS IN MAKING MÉLANGE YERN.

Following is the common problems occurring during manufacturing of Mélange yarns.

- Shade variation
- Variation in ratio (esp. in PC/PV/CVC) yarns
- Spots in the fabric

VI. APPLICATION OF MÉLANGE YERN

Mélange Yarns also known as "heathers", are a dramatic and innovative mix of different types of fiber to create magical textures in the resultant fabric that is woven and knitted from it.

Mélange yarns are popular due to their very attractive and unique fabric appearance. The wavy like effect due to different fibers blending and wide range of color tones due to different fibers blending makes it much popular and rich in look. Its fabric smoothness is much better.

Mélange Yarns are being used in knitwear and denim industry.

Mélange yarn is widely used in warp and weft knitting machines, various V-bed knitting machines, and winding machines. Mélange yarn is applicable to underwear, textile, casual wear, sportswear, shirts, business suits, socks and all sorts of cloth products, as well as bed linens, towels, decorative fabrics and other home fabric products. 12

VII. VARIOUS COMPANIES PRODUCING MÉLANGE YARN

Mélange yarns are popular in textile market and various companies which manufacturing or supplying mélange yarn are as follows:

1. Naveen Cotton Mill Private Limited, Tirupur⁸
2. RSWM Ltd. Noida¹⁰
3. RJK Impex, Ahamadabad⁷
4. Himachal Fibers Ltd., Barotiwala, H.P.⁹
5. Fulgar Castel Goffredo, Northern Italy Q-NOVA® MÉLANGE.¹¹

6. Kongkiat Textile Co ltd , Thailand ²⁰
7. Gimatex Hinganghat , wardha ²¹
8. Apex Textiles, Ghaziabad ²²
9. Hem Impex , Indore , Madhya Pradesh ²³

VIII. CONCLUSIONS

Mélange Yarn is very significant in textile fashion industries. Mélange Yarn produces a very special effects. Therefore Mélange Yarn and making of Mélange Yarn is art and science of creating special and unique effect which buyers always like and furthermore it always influence the buyers.

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