

Our commitment to the environment and to our customers has always been strong. Today, the alignment of values between them is what drives us to bring new and better products to our industry. With our global presence throughout the entire value chain- from plantation to pulp, to fibre and to fashion - we, through our business development platforms, facilitate our value chain partners (spinners, weavers, processors and garmentors) to build business bridges across geographies.

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Birla Cellulose
Fibres from nature



Birla Viscose™

INTELLICOLOR

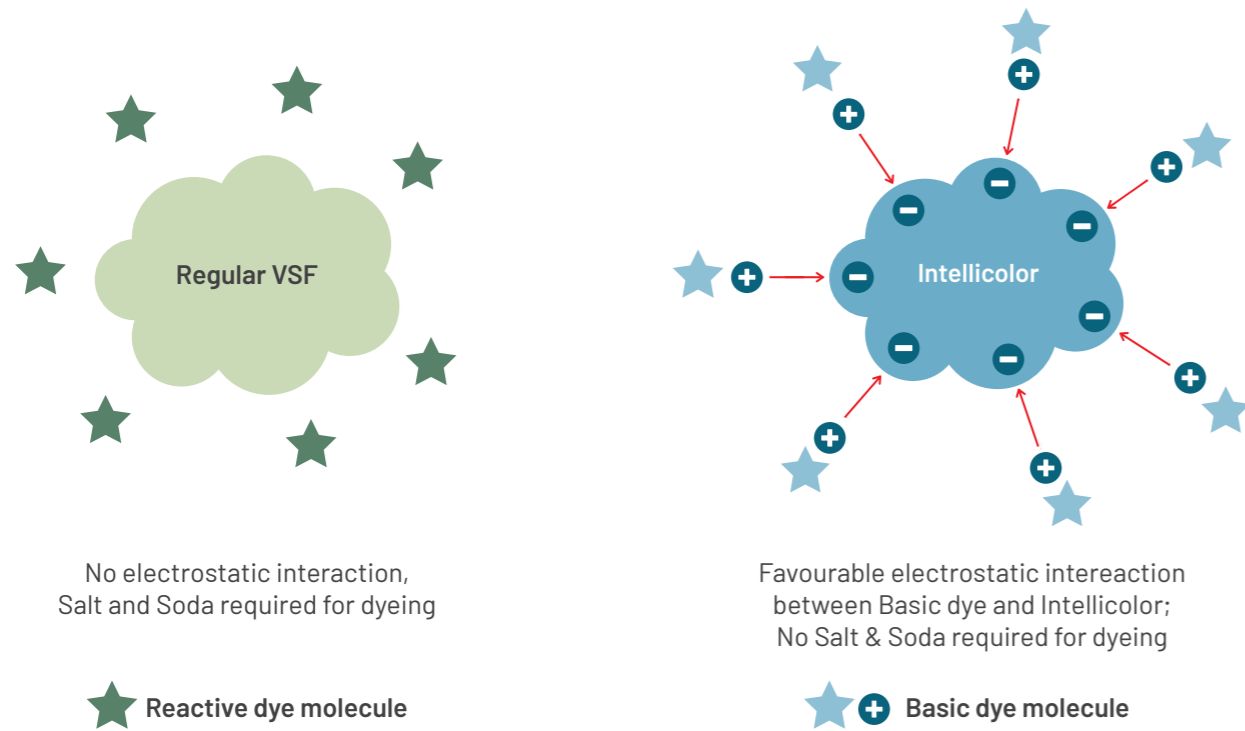
Salt free dyeing for a greener future



ADITYA BIRLA
CELLULOSIC
FIBRES

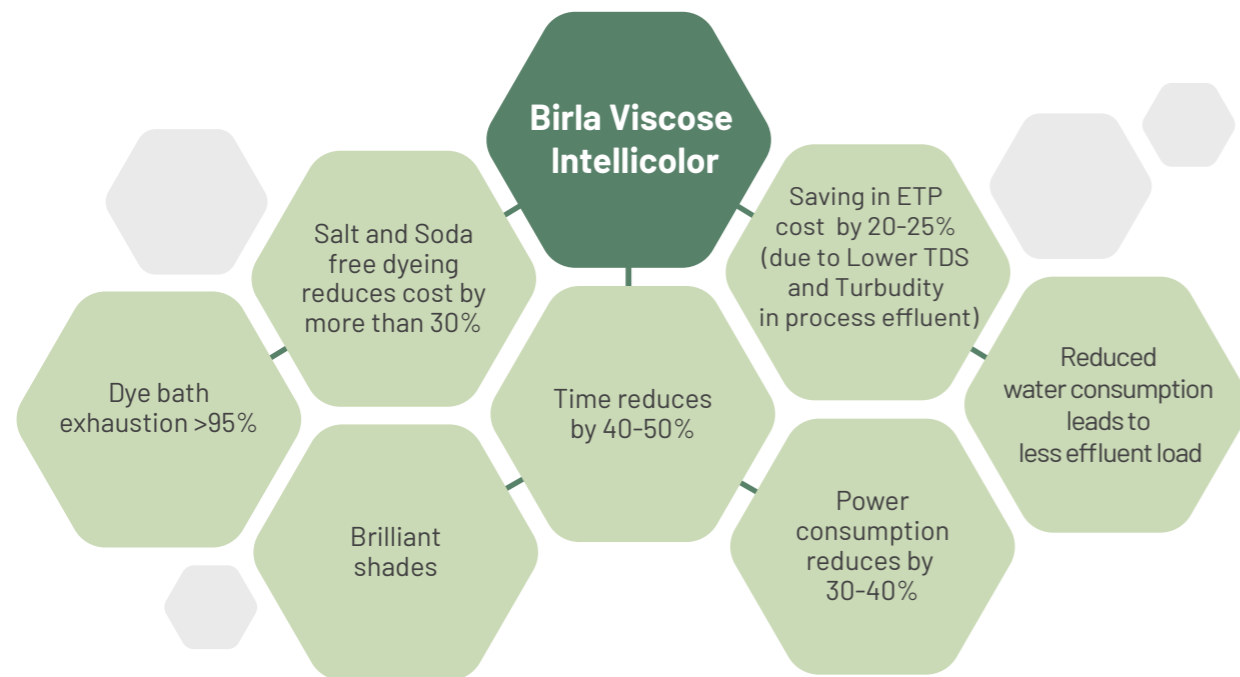


Intellicolor is a breakthrough in the process of dyeing using cationic or basic dyes, reducing the dye input and enabling up to 95% dye bath exhaustion. The process helps achieve brighter shades with high tinctorial value and color depth compared to reactive dyes with the same concentration of dyes. The process also stands out for its lower impact on environment.



BENEFITS OF DYEING WITH BASIC DYEING:

An approach towards sustainability



Disclaimer: The values are indicative and results may vary due to water input quality, shade depth, dye chemistry, process technology and process route adopted.

A NEW HORIZON OF DESIGN POSSIBILITIES WITH INTELICOLOR

Different shades possible with Intellicolor: Different brilliant shades can be achieved with Intellicolor Fibre using Basic dyes.



Different shades with Intellicolor /CDPET blend: Solid brilliant shade can be achieved in a single pot dyeing of Intellicolor/CDPET blend using basic dyes.



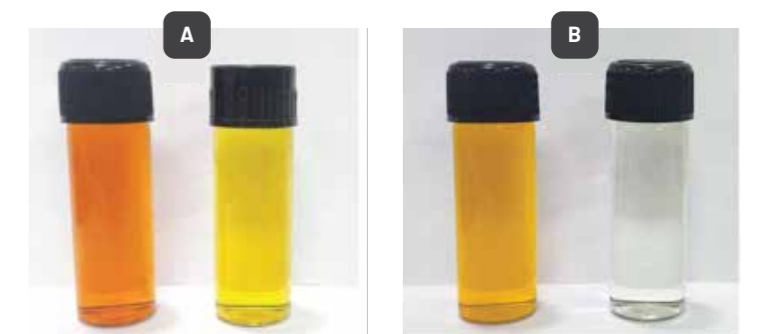
Different pattern effects with VSF/ Intellicolor: Different melange and designer pattern effect can be achieved with Intellicolor and normal VSF



INTELICOLOR FOR ECO-FRIENDLY AND SUSTAINABLE FASHION

Less effluent left in dye bath

The final dye bath showed almost complete dye consumption with Cationic dyeing (B) compared to Reactive dyeing (A). Hence, less washing is required to get rid of the unfixed color and reduce water consumption.



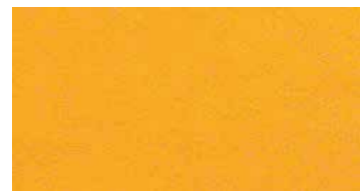
Initial dye bath of Reactive Dye After dyeing dye bath (~70%)

Initial dye bath of Basic Dye After dyeing dye bath (~95%)

Dyeing of fabric with Reactive and Basic dye at different shade percentage:

VSF (Reactive Dyeing)
1.5% M-DS+60 gpL
Na2SO4+16 gpL Na2CO3

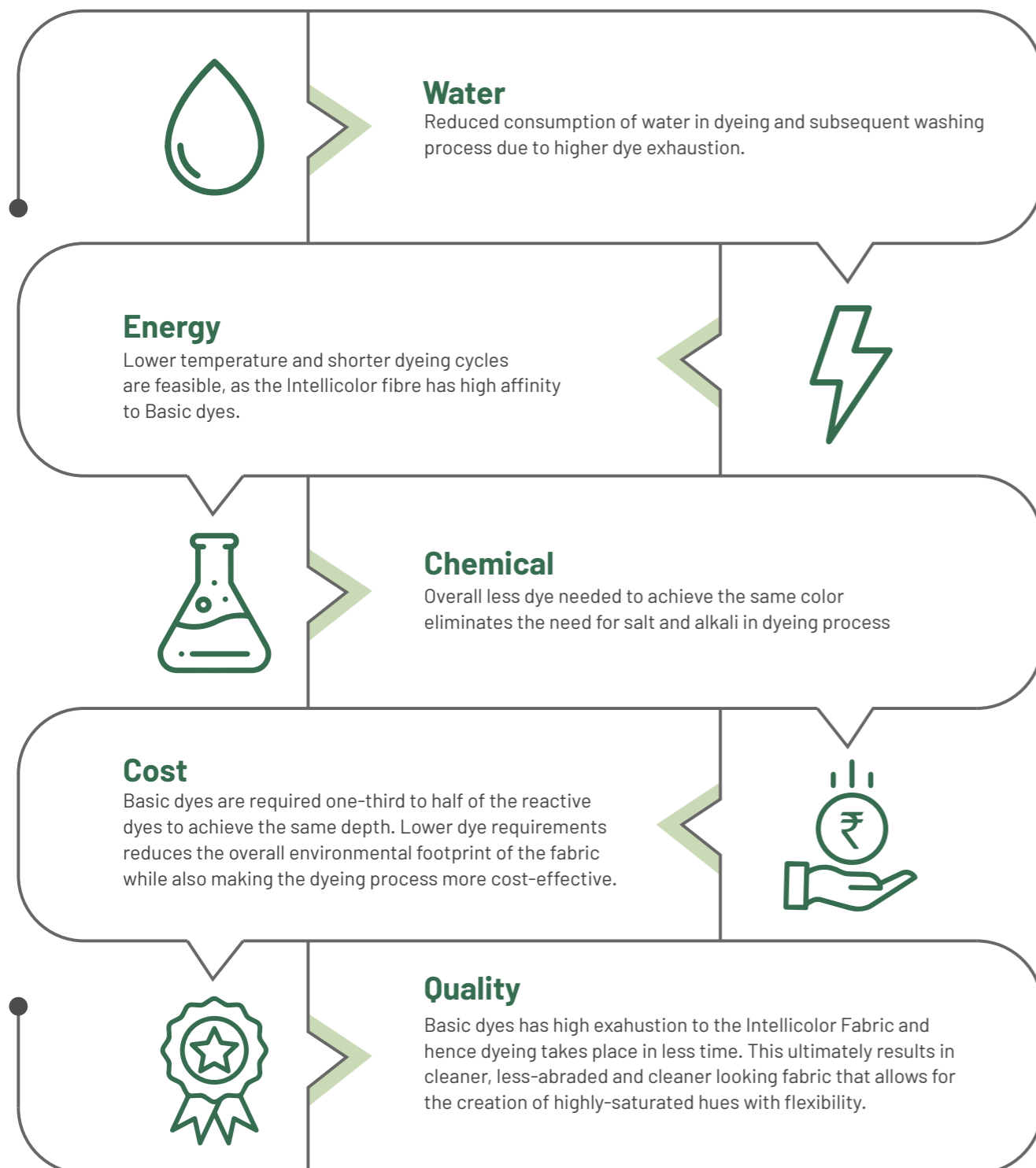
Intellicolor (Basic Dyeing)
0.5% CGL +0.2 gpL
Levocol CCRL



Required 25-50% less dye to achieve the same depth thus lowers the dye consumption.

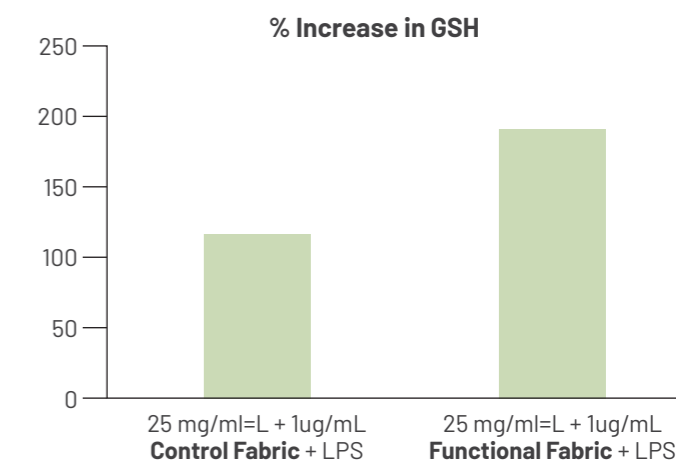
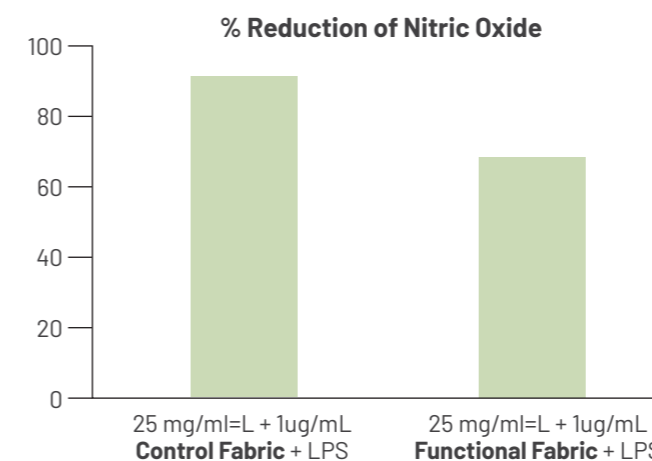
SUSTAINABLE ADVANTAGES/BENEFITS

Intellicolor is not only embracing sustainability, but an innovation which exceeds market expectations.



Health Benefits

1. Anti-oxidant (anti-ageing) property of Intellicolor vs control Viscose fabric



* Samples were analyzed at Radiant Research Services PVT. LTD.

Nitric oxide (NO) generated in biological tissues is one of the important factors which causes aging. Intellicolor showed a significant reduction (28.07%) of NO (Nitric Oxide) compared to the regular Viscose fabric (5.77%), which signifies the antiaging properties achievable with Intellicolor.

GSH (glutathiomine) is an intra-cellular reductant and plays major role protecting cells against free radicals, peroxides and other toxic compounds. Anti-inflammatory activity of the test fabrics is demonstrated by GSH increase in HaCaT cells. Intellicolor showed a significant increase in GSH levels over the regular Viscose fabric by 70%, indicating superior antioxidant properties achievable with Intellicolor.

2. Intellicolor showed durable antibacterial and antiodor performance

Intellicolor (Dyed) after 50 laundry wash cycles was analyzed for antimicrobial and antiodor activity at Intertek lab

Test Organism	Percentage reduction of Bacteria
Staphylococcus.areus	>99
Klebsiella.pneumoniae	>99

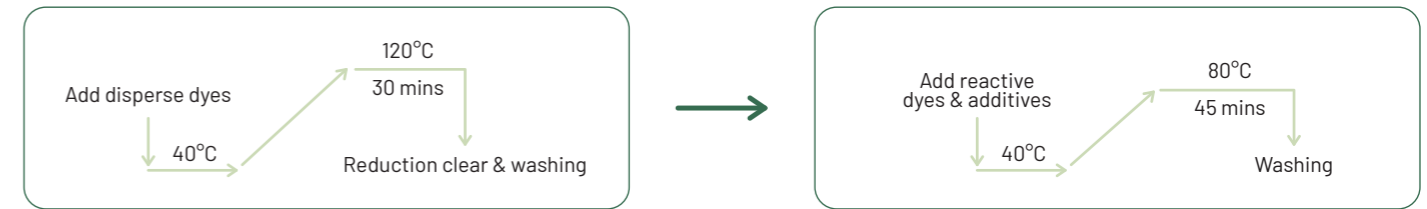
Fabric sample showed 95% ammonia reduction, which is responsible for the bacterial odor. The performance signifies the antiodor activity of the fabrics made up with Intellicolor.

Processing of Intellicolor: Comparative study between Intellicolor dyeing and conventional VSF dyeing

Compared to the two-step dyeing of regular VSF and Polyester, the one-bath dyeing of Intellicolor with a blend of CD-PET provides a novel sustainable approach. The one bath dyeing requires shorter dyeing cycle that utilizes less water, energy and chemicals.

TWO-BATH DYEING

Conventional dyeing of Polyester/VSF blend

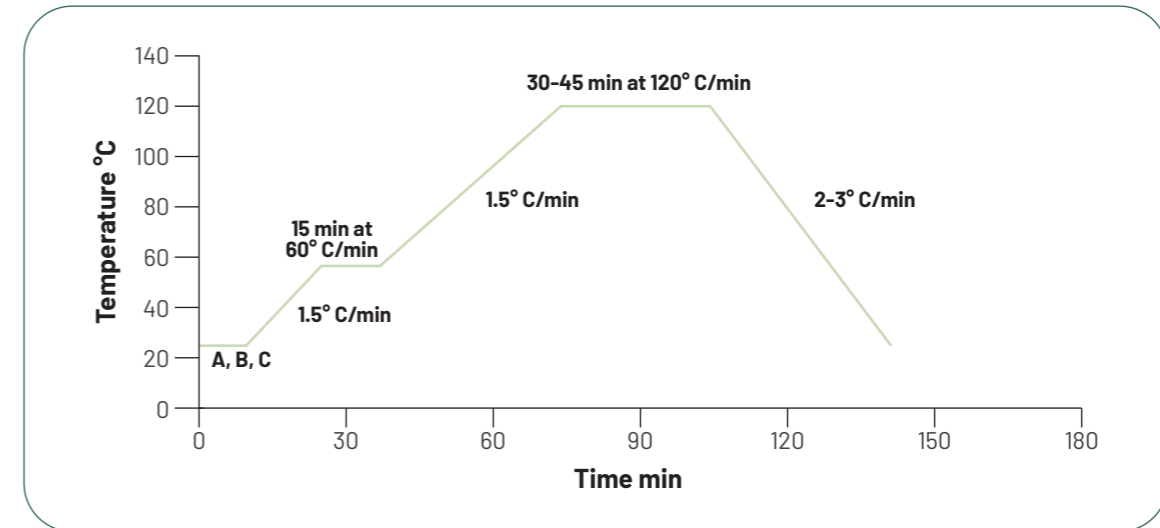


1st cycle : Dyeing of Polyester with Disperse dye

2nd cycle : Dyeing of Viscose with Reactive dye

SINGLE -BATH DYEING

Sustainable Innovative dyeing of CD-PET/Intellicolor blend



A - Basic dyes | B - pH: 3.5-5 MLR: 1:10 or more | C - Levelling agent: 0.2-2 gpl based on shade

1. Set the dyebath at 30°C with the required amount of water and dye.
2. Add levelling agent and adjust pH (3.5-5).
3. Add fabric and run for 5 minutes.
4. Raise the temperature to 60°C within 15 to 20 minutes at rise of 1.5°C/min.
5. Continue the dyeing at 60°C for 15 minutes.
6. Then raise the temperature to 120°C within 40 to 45 minutes at rise of 1.5°C/min.
7. Continue the dyeing at 120°C for 30-45 minutes.
8. Decrease the temperature to 30°C at rate 2-3°C minutes.
9. Drain the dye bath and @ 50 °C give one water wash, Soap wash (ECE detergent) @ 50°C/20 min, followed by 50°C hot and cold washes and dry.

** For Dyeing 100% AVSF fabric or melanges with Cotton or VSF, first 4 steps will be common, in 5th step allow dyeing time of 40 min and allow the cooling as per step 8.

