

2014

TOP-DYE

SERIES **EASY**  
**DYEING**

TECHNOLOGIES FOR THE DYEING AND FINISHING MILLS

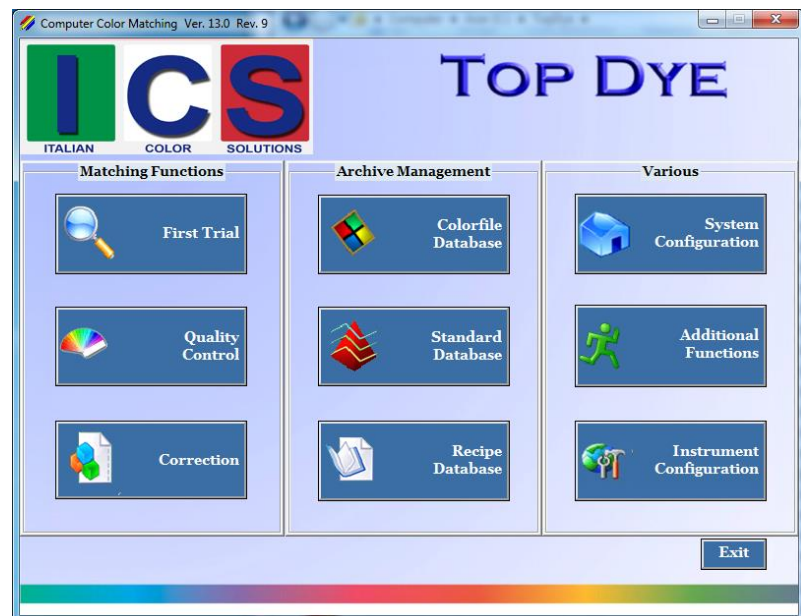
I.C.S. ITALIAN COLOR SOLUTIONS SRL



## TOP-DYE

### How to prepare Colorant Data-Base (Colorfile)

In order to correctly train the Top-Dye for processing a new ColorFile, we recommend you to be complaint with the rules that are hereinafter detailed. Let us remind you these rules deeply affect the overall performance of our color-matching system and, hence, their observation should be considered as the initial point for successfully exploiting the color imitation and correction algorithms of the Top-Dye.



- Identify and choose the substrate (i.e., cotton, wool, and so forth) to be used since the ColorFile samples will be generated accordingly to the specified substrate;



- Store a consistent amount of the selected substrate in order to update the ColorFile sample generation when new dyes are available (i.e., 5 kg for the yarn substrate or 10 meters in the case of textile fabric);
- Dye the raw fabric (substrate fragment) in the so-called "blind" bath that is made with auxiliaries only. Acquire the reflectance spectrum of this dyed substrate.
- Dye the ColorFile samples with colorant at different concentrations and acquire their reflectance spectra;
- Be aware to work in the similar experimental conditions when preparing a ColorFile, i.e.: use the same water (pH, temperature, hardness), dispense the same auxiliaries, utilize the same scale for weighting sample and dyestuff amounts, and so forth. This circumstance mitigates the noise due to the experimental variables that may affect the dyeing process;
- Repeat a second time the generation of the concerned ColorFile in order to reduce noise affecting instrument measurements and dyeing process;
- if the recipe management will involve dyes at concentrations lower than 3.0%, a set of five or eight plates dyed at different concentration will be produced for the ColorFile generation.  
The recommended concentrations are: **0.03%, 0.1%, 0.3%, 1.0% and 3.0%**;
- if the recipe management will involve dyes at concentrations greater than 3.0%, a set of five or eight plates dyed at different concentration will be produced for the ColorFile generation.  
The recommended concentrations are: **0.1%, 0.3%, 1.0%, 2.0% and 4.0%**;





- if the recipe management will involve dyes at concentrations lower than 1.0%, a set of five or eight plates dyed at different concentration will be produced for the ColorFile generation.

The recommended concentrations are: **0.01%, 0.03%, 0.1%, 0.3% and 1.0%**;

- if you generally work using the "gram-per-liter" annotation (instead of the "percent" unit for the dye concentration), it is enough to multiply the above suggested concentrations for a factor of 10 in order to correctly update these amounts.
- Apply over each dyed sample a label indicating the dyestuff concentration;



- **In the case of yarn substrate** we also recommend to wrap around a small piece of carton the yarn until a compact and thick skein of yarn is shaped. Be aware to use a carton substrate that is not “optically treated”, i.e. that can’t emit fluorescent radiation when illuminated with U.V. radiation source. Be sure that the yarn skein completely covers and obscures the underlying carton support in order to avoid any



interference with the reflectance measurement of the yarn. A picture of this skein is shown in the following figure.



**NOTE: This guide is intended to be a general orientation guide assessing the basilar concepts for the exhaust dyeing process. If a specific industrial application of colorimetry is handled, please contact local sales agency of I.C.S. to receive support for the colorant data-base preparation.**

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