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ASPECTS OF METAMERISM IN TEXTILE DYEING

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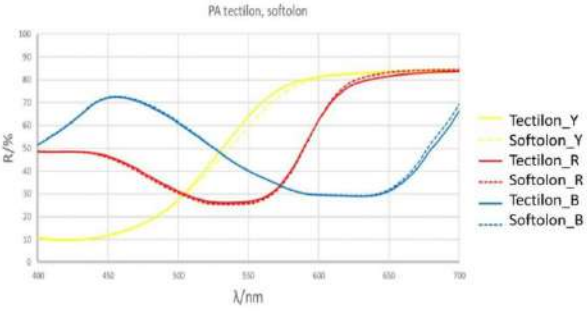
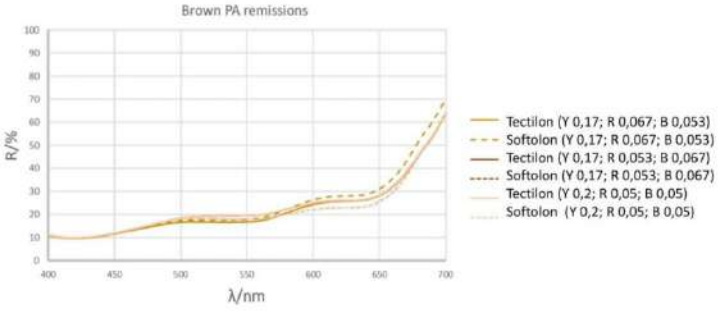
Abstract: In this paper, metamerism was investigated with the aim of determining the difference in the behaviour of knit fabrics dyed with the pure dyes and mixtures from a various suppliers under different light sources. We have received an inquiry from the factory that metamerism of new cheaper dyes (Softolon) should be tested again compared to the old dyes (Tectilon). For the testing materials, the factory sent to us dyed tights made of polyamide knit. In this paper, the received samples were spectrophotometrically measured. The considered quality of the Softolon dyes in comparison with the Tectilon dyes from all spectrophotometric researches is equal. Both dyes show no signs of metamerism and are of exceptional quality in the context of colour reproduction and tinting.

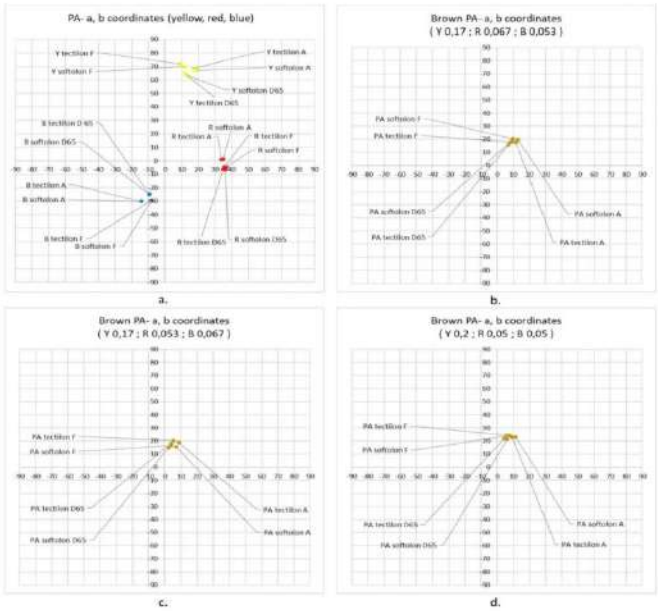
Keywords: *Metamerism; dyes (Tectilon, Softolon); spectrophotometer; different light sources (D65, A, F11).*





From remission curves for dyes of pure hues and for their mixtures in different ratios of dye concentrations it can be concluded that both types of dyes (Tectilon and Softolon) have approximately equal remissions through the visible part of the spectrum (400-700 nm).

Metamerism is a phenomenon in which two or more observed coloured patterns, of similar hue, look identical under one light source, and by changing the light source, observer, observation field size, or observation geometry, there is a visible difference in colour hue.



Conclusion

Metamerism was investigated in order to determine the difference in the behaviour of knit fabrics dyed with the pure dyes and mixtures from a various suppliers under different light sources, because the colour constancy under different light sources is one of the parameters of product quality. From the tabular representations it can be seen that the values of brightness, L *, saturation, C * and hue, h for dyes of pure hue (yellow, red and blue), and the dye mixture under different light sources are approximately the same. Whether it is a Tectilon or a Softolon acid dye, the changes are in the same direction. Approximately the same changes can be read from the a * / b * diagram for pure hue dyes as well as for their mixtures. The remission curves for Tectilon and Softolon dyes are approximately equal. The measured metameric index is less than MI ≤ 2 and is therefore considered acceptable. The considered quality of Softolon dyes in comparison with Tectilon dyes from all mentioned researches is equal. Both dyes show no signs of metamerism and are of exceptional quality in the context of colour reproduction and tinting.

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