

# Dyeing properties of PET stretch fabrics knitted by high gauge circular knitting machine

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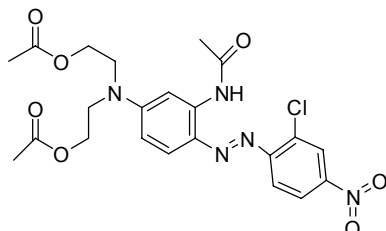
## 1. INTRODUCTION

In case of PET/Spandex blends fabrics, it is well known that the staining of disperse dyes on spandex component deteriorates their fastness properties. In this study, the effects of dyeing temperature and molecular weight of disperse dyes on the fastness properties of PET/Spandex were investigated.

## 2. EXPERIMENTAL

### 2.1 Materials

PET(80%)/Spandex(20%) blends circular-knitted fabrics (PET 30d/24f) and spandex (20d) were provided by TAEJIN Co. Dispersing agent and pH controller were provided by TAEJIN.



**Fig. 1.** Chemical structures of Foron Rubine S-2GFL 0025 (Red 167)

Four disperse dyes (Foron Rubine S-2GFL 0025 (Red 167), Suncron Navy Blue 2GLS (Blue 79:1), Suncron Blue S-2G (Blue 367), and Terasil Navy Blue WW-GSW) were provided by OH YOUNG and Ciba specialties.

### 2.2 Dyeing and Reduction Clearing Procedure

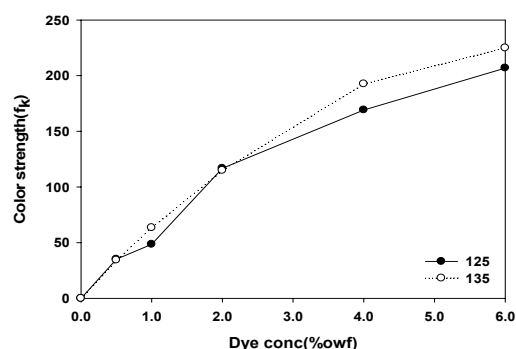
Fabric (2.0g) was dyed at a liquor-to-goods ratio of 20:1 in a dyebath containing disperse dyes (0.5, 1.0, 2.0, 4.0, 6.0%o.w.f.), dispersing agent(0.5g/l) and pH control agent (0.4g/l).

Dyeings commenced at a dyebath temperature of 50°C, which was increased up to the maximum dyeing temperature (125 or 135°C) at a rate of 2°C/min and maintained for 60 min.

The color fastness was determined according to International Standards: ISO 105 C06 A2S (color

fastness to washing), ISO 105 E04 (color fastness to perspiration) and ISO 105 X12 (color fastness to rubbing). Staining and change in color were evaluated using grey scales.

## 3. RESULTS AND DISCUSSION



**Fig. 2.** Build-up properties of Terasil Navy Blue WW-GSW on PET/Spandex blends fabrics

The higher dyeing temperature produced better build-up properties especially at higher dye concentration and the temperature effect was remarkable for the higher energy type disperse dyes.

## 4. ACKNOWLEDGEMENTS

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## 5. REFERENCES

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