

Dyeing properties of angora fabrics with reactive dyes

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1. INTRODUCTION

Angora fabrics are light, warm. Also they are famous for their silky sheen and color appearance when they get dyed. However, they cannot be spun by themselves because they have a short fiber length, lack of crimp, same scale with wool. In these days, with development of spinning technology, they are used for many clothes by mixed spinning with other fabrics. So we need to study of dyeing properties of angora fabric. In this study, we were investigating to the optimum of dyeing reactive dyes of angora/PET blend fabrics. We used red, yellow, blue three kind of reactive dyes and set a various dyeing condition (temperatures, concentration, pH, and neutral salt). Our focus is dyeing properties distinction of follow temperature and pH values. In last we want to know the distinction of dyeing properties that follow various dyeing condition.

2. EXPERIMENT

The angora/PET blended fabric were dyed with reactive dyes (Lanasol Red 2G, Lanasol Yellow4G, Lanasol Blue3G) at various liquor ratio (1:50), dyeing concentration (2~10% o.w.f.), temperatures (70~110°C) and pH values (3~8) for 1hr. The pH was adjusted using acetic acid and sodium carbonate. Dyed fabric is analyzed from CCM which is K/S.

$$K / S = \frac{(1 - R)^2}{2R}$$

Where,

K: coefficient of absorption of the dye at λ_{\max}

S: coefficient of scattering at λ_{\max}

R: reflected light at wavelength λ_{\max}

3. RESULTS AND DISCUSSION

We find optimum angora/PET blended conditions through condition pH (3~8), temperature (70~110°C), and concentration (2~10% o.w.f).

The conditions that are dyeing pH and dyeing temperatures and concentration were affected for dyeing. The results showed reactive dyeing optimum condition of angora/PET fabric. The temperature supports dyeing properties until 110°C, when temperature reaches 110°C, most condition occur. In addition, to increase acidic factors give it to suitable properties, especially at the pH3, and the dyeing ratio concerned with o.w.f increase during the 8% o.w.f respectively. But, the condition exceeded 8% o.w.f is not effective than 8% o.w.f and below it.

4. CONCLUSIONS

In this work, the dyeing properties using reactive dye were examined. The effect of dyeing temperatures color strength gradually increased with increasing temperature. pH3 and pH4 showed the similar K/S values for cost reduction the optimum condition of pH is pH3. That color strength of the dyeing was dependent on condition of the dyeing temperature and pH values. Also, It has been found that suitable amounts of reduce and alkali were determined from the experiments. In addition, the efforts to reduce the use amount of chemicals were considered in terms of environmental pollution and cost reduction.

5. Acknowledgements

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6. REFERENCES

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