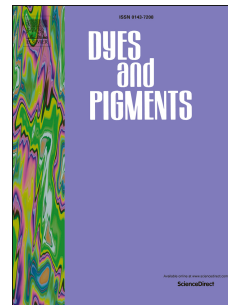


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A novel reactive dye system based on diazonium salts

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Abstract

Azo dyes, possessing a primary aromatic amino group, on diazotisation in presence of cotton followed by treatment with soda ash at 60-65°C were found to 'reactively' dye cotton with varying degrees of fixation depending on the chemical structure of the azo dye. Evidence of dye-fibre reaction is indirectly inferred from poor to fair colour values obtained in absence of added soda ash. Dyed cotton retained significant colour even after three treatments with boiling dimethyl formamide (DMF). Coloured cellulose precipitated when a solution of dyed cotton in 85% w/w phosphoric acid was diluted with dimethyl sulfoxide (DMSO). The phosphoric acid-DMSO mixture was colourless. These two tests prove the existence of a dye-fibre covalent bond. A new class of reactive dyes without an externally attached reactive system is therefore, in principle, available. It will have the advantage of reduced raw material and manufacturing costs.

Keywords

Reactive dye, Diazonium salts, Cellulose, Cotton, Fastness properties

1. Introduction

Reactive dyes are widely used in the textile industry on account of their diverse shades, high fastness properties and ease of application. They are suitable for dyeing cotton, wool and polyamide fabrics. With about 1150 entries in Colour Index and ever rising volumes, the

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