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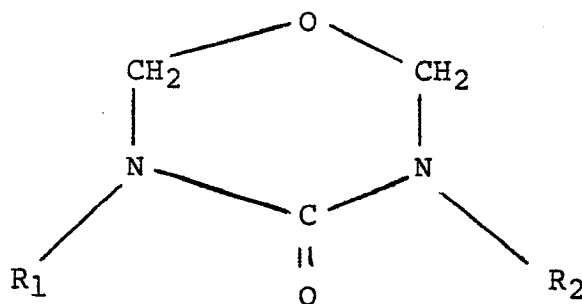
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54 Process for treating textile fabrics and compositions for use therein.

57 A process for imparting crease-resistance or shrink-resistance to a textile fabric, by impregnating

the fabric with a solution of a uron resin of the formula



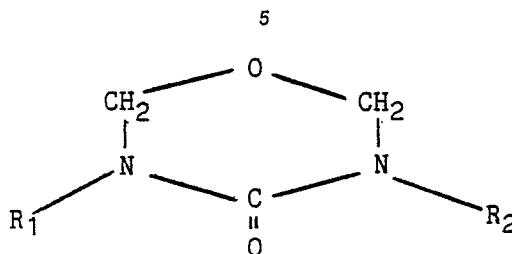
where R₁ and R₂ are H, -CH₂OH or alkyloxymethyl, and subsequently heat-curing the resin in the fabric, is carried out with a polyol having 2 to 4 carbon atoms, such as diethylene glycol, in the solution to inhibit the build-up of solids on heated elements which the impregnated fabric contacts during processing.

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Process for treating textile fabrics and composition for use therein

This invention relates to a process for treating textile fabrics to impart crease-resistance or shrink-resistance to them, and to a composition for use in such a process.

In one well known process for treating a textile fabric to impart crease-resistance or shrink-resistance to it, the fabric is impregnated with a solution of a uron resin of the formula



where R₁ and R₂ are -H, -CH₂OH or -CH₂OR₃, R₃ being an alkyl group having one to four carbon atoms, and the resin is subsequently cured in the fabric. Curing ordinarily entails heating the impregnated fabric in the presence of a resin-curing catalyst (usually an acid-reacting material), and it is often found that during heating there is a build-up of solids deposited from the impregnating solution onto heated elements such as roller-driers or the pins or clips which support the fabric during its passage through the curing chamber.

According to the present invention, such build-up is reduced by including in the impregnating solution a polyhydric alcohol (subsequently called 'a polyol') having from 2 to 4 carbon atoms, for example ethylene glycol, propane diol (1,2 or 1,3), butane diol (1,2; 1,3; or 1,4), glycerol or diethylene glycol.

Preferably the polyol is employed in an amount forming 0.5 to 30%, particularly 2-25%, by weight of the uron resin.

The invention is specially applicable to the treatment of cellulosic fabrics such as cotton, linen, rayon and polyester/cotton.

The invention is further illustrated by the following examples, in which parts are parts by weight.

EXAMPLE 1

100 parts of a commercially available uron resin, being an aqueous solution (85% solids) of N,N'-di(methoxymethyl) uron, were mixed with 5 parts of diethylene glycol. To 70 parts of the result-

ing mixture were added as catalyst 21 parts of a 30% aqueous solution of magnesium chloride, the mixture thus formed being then diluted to one litre with water.

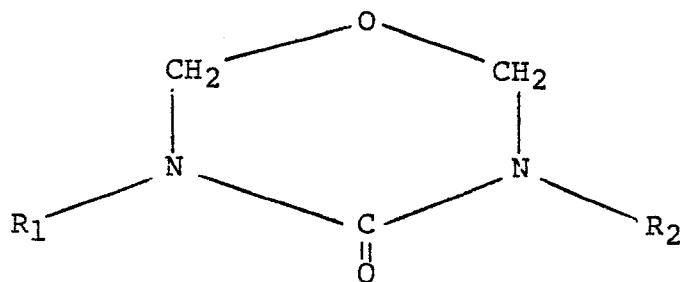
EXAMPLE 2

The aqueous composition obtained from Example 1 was applied in an entirely conventional way - (by a two-bowl pad mangle) to a fabric made from 50/50 polyester/cotton blended fibre, so as to leave in the fabric 60% of its own weight of the impregnating solution. The impregnated fabric was then taken up and pulled out to the desired width by a conventional pin stenter and submitted to a conventional drying and curing operation (30 seconds at 180°C) in a drying chamber. It was found that, even after several hours running, there was no substantial build up of solid material on the pins of the stenter.

The polyol had no apparent adverse effect on the fabric, and did not affect the degree of cure of the resin. Additionally, tests on the fabric by the procedure of AHTCC and Shirley Institute showed a reduction of about 50% on both free and released formaldehyde in the fabric.

Claims

1. A process for treating a textile fabric to impart crease-resistance or shrink-resistance thereto, by impregnating the fabric with a solution of a uron resin of the formula



where R is -H or -CH₂OH or -CH₂OR₃, R₃ being an alkyl group having 1 to 4 carbon atoms, and subsequently heat-curing the resin in the fabric, wherein the uron resin solution additionally contains a polyol having 2 to 4 carbon atoms.

2. A process according to claim 1, in which the polyol forms 0.5 to 30% by weight of the uron resin.

3. A process according to claim 2, in which the polyol forms 2-25% by weight of the uron resin.

4. A process according to any of claims 1 to 3, in which the polyol is ethylene glycol, a propane diol, a butane diol, or glycerol.

5. A process according to any of claims 1 to 3, in which the polyol is diethylene glycol.

6. A process according to any of claims 1 to 5, in which the uron resin is one in which R₁ and R₂ are both methoxymethyl groups.

7. A composition suitable for use in the process of claim 1, comprising a uron resin of the formula there defined and a polyol having 2 to 4 carbon atoms.

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