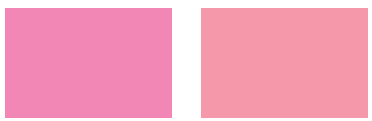
Uniprint

Full Shade / Reduction 1:4	△	☼	3	◫	Ⓡ	Cl
Uniprint Yellow 8G - Disperse Yellow 82	B	3-4	5 5 4	5 5 4	4-5 4	4-5
Uniprint Yellow 5G - Disperse Yellow 119	C	6-7	5 5 5	5 5 4-5	5 5	5
Uniprint Yellow 3G - Disperse Yellow 54	B	7	5 5 5	5 5 5	4-5 4-5	5
Uniprint Yellow G - Disperse Yellow 3	B	7	4-5 5 5	5 5 5	5 4-5	5
 Uniprint Orange R - Disperse Orange 25	B	5	4-5 5 4-5	5 4-5 4	5 4-5	5
 Uniprint Scarlet B - Disperse Red 1	B	3	5 5 4-5	4-5 5 4	4-5 5	4-5
 Uniprint Red FB - Disperse Red 60	C	7	5 5 4-5	5 5 4-5	5 5	5
 Uniprint Pink 5B - Disperse Red 364	C	6-7	5 5 5	4-5 5 5	5 5	4-5
 Uniprint Rubine 2B - Disperse Red 375	A	4-5	4-5 4-5 4	5 4-5 4-5	4-5 5	4-5

The **Uniprint** are pure dyestuffs in powder form which are classified by their "ease of transfer" into three main groups:-

A - Rapid rate of transfer

B - Normal rate of transfer

C - Slow rate of transfer

Rates of transfer are only empirically defined by the above letters. Generally dyestuffs in the same transfer class will transfer at the same rate from paper onto a flat substrate and to the same depth on a textured or pile fabric.

The patterns in this publication were heat transferred onto knitted polyester material at 210˚C for 20 seconds. The papers for the full shades were printed flexographically from an ink containing 5% dyestuffs.

Some of the dyestuffs are also suitable for transferring onto other synthetic materials at the following temperatures:-

Polyamide 6.6 - 200˚C for 20 seconds

Polyamide 6 - 190˚C for 20 seconds

Acrylics - 195˚C for 25 seconds

Triacetate - 195˚C for 20 seconds

Optimum transfer conditions can vary substantially depending on type of fibre, fabric construction and transfer machinery. Trials should be carried out in the laboratory before proceeding with commercial runs.

Key to technical information

△	Transfer Class	
☼	Light Fastness	1/1 Standard Depth
3	ISO 3 Wash Test	Change of Shade Staining of Polyester Staining of Polyamide
◫	ISO Alkaline Perspiration	Change of Shade Staining of Polyester Staining of Polyamide
Ⓡ	Rubbing	Dry Wet
Cl	Chlorination	Change of Shade

Uniprint

Full Shade / Reduction 1:4	△	☼	3	◫	Ⓡ	Cl
 Uniprint Violet B - Disperse Violet 17	A	7	4-5 5 5	5 5 5	5 5	5
 Uniprint Pink 3B - Disperse Red 11	B	5	5 5 4	5 4-5 4	4-5 4-5	5
 Uniprint Violet 3R - Disperse Violet 105	B	6	4-5 5 4-5	4-5 4-5 4-5	5 5	4-5
 Uniprint Blue 6G - Disperse Blue 60	C	7	5 5 5	5 5 5	4-5 5	5
 Uniprint Blue 2B - Disperse Blue 359	C	5	5 5 4-5	5 5 4-5	5 5	5
 Uniprint Blue 2G - Disperse Blue 14	B	3-4	5 5 4-5	5 5 5	5 5	5
 Uniprint Blue 5R - Disperse Blue 72	B/C	6	5 5 4-5	5 5 5	5 5	5
 Uniprint Pink RF - Disperse Red 4	A/B	4	5 5 4-5	5 4-5 5	5 5	5
 Uniprint Blue FFR - Disperse Blue 3	B/C	3-4	5 5 4-5	5 5 5	5 4-5	5

Transfer Printing

Transfer printing is a term used to describe any process involving the transfer of a coloured design from a paper to a textile or polymeric substrate. The method most widely used is vapour transfer printing, which depends for its success on the volatility of the dye and the preferential absorption of the dye vapour by the textile material with which it is in contact. The method is often termed "Heat Transfer Printing" because of the high temperatures used to ensure an adequate supply of dye vapour. The procedure comprises the preparation of the paper, the application to the paper of specially prepared inks and the transfer of the design to a specific substrate by dye volatisation, as rapidly as possible at optimum temperature.

Transfer Printing Paper

The specification of the paper depends in the printing method to be used but in all cases an evenly formed paper free from surface dust and defects is required. The printing of the heat transferable design can be achieved by any of the commercial processes employed, namely gravure, flexographic, lithographic and screen-flat and rotary.

Transfer Printing Inks

The dyes used in the formation of the printing inks come from the disperse dye class, they are used in the undispersed form and are suitable for solvent, oil or water based media. A resin is necessary to bind the dye to the transfer paper and prevent mark off. For water based inks, alkyl celluloses and alginates have been found suitable and for solvent based systems poly (vinyl acetate) or acrylate polymers in alcohol dispersions have been used.

Preparation of the inks is similar to that used for normal printing inks i.e. by ball milling or triple roll mills.

Although specific ink formulations are not generally available from the ink manufacturers, the following recipe has been found to give good results in laboratory work.

Glascol LE15	:	600ml
Water	:	500ml
Methylated Spirits	:	800ml
Triethanolamine	:	80ml
33% Ammonia Solution	:	60ml

Compatibility

When using dye mixtures it is essential that the individual dyes are compatible as differences in vapour pressure, affinity, and rates of volatilisation could lead to colour differences at various temperatures. It is best to employ dyes from the same transfer class where possible.

Substrates

There are now many textile materials which can be coloured by transfer printing, although the main ones are polyester, polyamide, polyacrylonitrile and cellulose acetates. Blends with up 25% natural fibre content have been successfully transfer printed.

This information contained herein is given in good faith and is correct to the best of our knowledge. Owing to events outside our control we cannot accept liability for injury, loss or damage resulting from reliance on this information. Samples of the products illustrated are available for customer evaluation.

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