

Thermofax Screens

Print Media

In general, you can use any of the media designed for use with textiles as long as it has a suitable gel-like consistency that is stiff enough not to run or bleed easily but is soft enough to pass easily through the screen mesh.

Screen inks / fabric paints, thickened fibre-reactive dyes and discharge paste are all suitable. You can also print with PVA glue or fabric size ready for metal leaf application or with Fibre-Etch for devoré effects. DO NOT use acrylic paints – they will dry very quickly in the screen mesh and damage it permanently.

The type and brand of media you use will depend on the type of cloth you are using and the effect you want to achieve. It may also depend on the availability of the products (though the ones mentioned here are all available by mail order - see suppliers list).

ALWAYS check the manufacturers specific instructions for curing / drying / fixing etc and for any health and safety precautions you may need to take.
The following notes are general guidelines only.

Screen Inks and Fabric Paints

- Screen inks are suitable for use on natural and man-made fabrics as the colours sit on the surface and does not need to 'react' with the fibre molecules in the way that dyes do.
- Always use water based screen inks such as the **Textile Screen Inks** available from Thermofax Screens. Other brands such as **Speedball** or **Jacquard** that are designed for use on textiles are also suitable. Many fabric paints can also be used though some fabric paints eg **Pebeo Setacolor** need to be thickened with a proprietary thickener to achieve a consistency suitable for printing - check with the manufacturers instructions and/or your supplier for suitability.
- Screen inks/fabric paints come in a good range of colours and can be mixed to extend the range but take care when mixing brands – some do not 'go' together and will curdle – always test first!
- Most screen inks are transparent and can be made even more transparent by mixing with clear screen ink (extender or transparent base). Opaque screen inks and fabric paints are also available and if you wish to print on a dark background you will need to use these to make the design visible. Metallic screen inks are also opaque but can be mixed with an extender or transparent base to increase transparency. Avoid Lumière metallic paints – they are hard to get flowing through the mesh and the paint dries very quickly and will seal the mesh irrevocably.
- Screen inks can be printed on top of previously dyed fabric and you can also over-dye the fabric after you have printed with screen inks – the colour of the screen print should stay fairly true but the transparency of the ink and the strength of the colour beneath it may affect it.
- Generally screen inks will produce a sharper print than thickened dye-paint. You can screen print on ironed cloth for the sharpest possible images or you can try un-ironed cloth for a more textured print.
- All screen inks and fabric paints will stiffen the fabric to some extent, and particularly if they are thickly applied or if there are several layers of printing. This may or may not matter to you.
- Layers of screen ink or fabric paint can be built up without heat-setting between each layer – the layers can be overprinted wet or left to dry before overprinting for different results. If you are using metallic inks/paints, leave this layer till last and work on a dry background to avoid the sparkly elements sinking into the fibres.
- Most fabric paints and screen inks should be air-cured for up to 24 hours after completion and then heat set with an iron – no steam – set to a temperature suitable for the type of fabric. A pressing cloth or baking parchment is useful to protect the fabric. Take your time! It will take about 10-15 minutes to heat set about 1 metre of fabric. Iron the front and the back of the cloth.
- If desired, the fabric may be washed after heat setting but if you can bear to wait for a few days before washing, the inks/paints will have greater opportunity to settle into the fibres. Sometimes washing will soften the hand of the fabric. If the fabric is destined for something that will never be washed and you don't mind a stiffer hand, you can choose not to wash it at all!

Thickened Fibre-reactive Dyes

- Fibre-reactive dyes (eg **Procion MX**) thickened with **Manutex** (see recipes below) are suitable for use on natural (cellulose) fabrics including cotton, linen, viscose and rayon. They also work well with silk mixes such as silk/linen, silk/cotton and silk/viscose.
- A good range of colours is available and they can be mixed to create further variety. The dyes are transparent so each layer will be affected by the layers above and beneath - blue printed over yellow will be green etc. Dye molecules bond to the fabric molecules giving good, permanent colour.
- Generally fabrics should be soda-soaked and line-dried before printing with thickened dyes. N.B. During the rinsing process, some staining of the background fabric can occur even with cold water rinsing. If you want to retain a white or very pale background fabric you can try putting soda in the dye rather than in the cloth (see recipes below) – the area of cloth left unprinted will have no soda in it so staining is less likely.
- If you want a smooth surface and 'clean' image, iron the fabric after soda soaking and drying. Alternatively you can print on creased or wrinkled fabric for interesting textured images.
- After printing with thickened dyes the fabric needs to be 'cured' for 4-24 hours in a warm place. Try rolling the semi-dry fabric in plastic and putting it beneath a radiator (never on top), in an airing cupboard or even rolled in an electric blanket set on low.
- After curing, rinse fabrics thoroughly. First, cold rinse by hand with a little **Synthrapol / Metapex 38**, then machine cold-water rinse once or twice and finally machine warm-water rinse.
- If you plan several layers of printing, the (pre) soda-soaking and the (post) curing and rinsing must be done for each layer of printing.
- Printing with thickened dyes will not affect the hand of the fabric though the Manutex can sometimes prove stubborn to remove. If this happens, try dissolving 1-3 tabs of soda ash in a bucket of hot water and add a drop of Synthrapol / Metapex 38. Pummel the cloth in the mixture and then leave to soak for at least 30 minutes before rinsing well. Repeat as necessary.

RECIPES for printing with thickened fibre-reactive dyes	
Soda soaking for 2-3m of fabric	Make a solution with 5 tabs Soda Ash (not washing soda) to 2 litres of water - dissolve the soda ash in a little hot water and then top up with cold water to make a luke-warm mixture. Soak the fabric for 20-30 minutes, wring out and line dry. DO NOT pre-soak fabric in soda solution if you are using screen inks/fabric paints or if you are adding soda to the dye mixture – see below.
Thickened fibre reactive dyes	First make up a thin 'chemical water' of 200ml / 70g Urea to 1litre of water. This is the basic solution and can be used as it is. However, you may wish to add 5 ml of Ludigol per litre if you live in an area of high pollution and 5ml Calgon per litre if you live in a hard water area. Thin chemical water will keep indefinitely.
	To thicken the chemical water for printing, add 45ml / 30g of Manutex (Sodium Alginate) to 1 litre of thin chemical water. An old magimix (not one that is used for food preparation) or a bucket and hand-held electric mixer make this job much easier! Once mixed, leave in a cool place for 2 hours or overnight to thicken up. It should be the consistency of very thick honey. If it is not thick enough add a little more Manutex , re-mix and let sit for 2 hours. If it is too thick, dilute with thin chemical water. Thick chemical paste will keep for 4-6 weeks.
	Adding the dyes: Pour a small amount of thin chemical water into a suitably sized container, add dye powder and mix to a runny paste. Add half the desired amount of thick chemical paste and mix thoroughly. Add the rest and mix again. N.B. The amount of dye will depend on you – the more dye, the more intense the colour. Also fine fibres like silk need less dye than cottons and linens – experiment!
Soda-in-dye method	Only use this method to avoid background staining when the fabric is rinsed – see notes above). Add a 5ml teaspoon <u>each</u> of bicarbonate of soda + soda ash to a little thin chemical water and mix <u>immediately</u> to prevent the mixture forming lumps. Add to your thick chemical paste – this is enough for about 500ml of chemical paste. Mix your dye powder and add to the paste as described above. Only mix as much as you want to use - soda-in-dye will not keep as well as dye without soda.

Discharge Paste (for colour removal)

- **Jacquard Discharge Paste** is suitable for printing onto cotton, silk, linen and viscose.
- The discharge paste is activated by steam ironing and should be done soon after printing and certainly within 2 hours or so. Set the iron to maximum steam and 'pat' the iron over the area until the colour starts to disappear and the fabric begins to dry. You can then apply more pressure to the fabric to maximise the discharge of colour.
- Discharge paste will remove colour from most Procion MX dyed fabrics (though turquoise can be stubborn) and some commercially dyed fabrics – test first. Colour removal will not be complete – blue fabrics often discharge to peachy colours and black fabrics may show beige or brown. Experiment – unexpected results can be very exciting!
- Colour can be added back in to discharged fabrics with further printing (with thickened dye or screen ink/fabric paint) or by over dyeing.

PVA glue / fabric size (for metal leaf application)

- Work in small sections, washing the screen frequently to avoid the glue drying and sealing the mesh.
- Allow the printed glue/size to dry until 'tacky' before applying the metal leaf.
- If using loose leaf, lay down a piece a little larger than the area you have printed. Brush with a soft brush to push the leaf into the glue/size. Dry iron to ensure good adhesion and then brush off the excess leaf with a stiff brush. The excess leaf can be collected for further use.
- If using transfer leaf, apply the sheet, leaf side down, and press gently with a pad of cotton wool. Lift the sheet carefully - the leaf should have transferred onto the printed glue/size. Dry iron to ensure good adhesion.
- Generally speaking metal leaf should be the final process applied to the cloth as washing can damage the leaf.

Fibre-Etch (for devoré effects)

- **Fibre-Etch** gel removes the cellulose component from mixed fibres such as silk-viscose velvet or silk viscose satin to achieve a devoré effect. Screen printing is a good method for application as a thin, even layer is put onto the cloth.
- The cellulose 'pile' can be removed or sculpted to create special effects.

Suppliers

- **Kemtex Educational Supplies Ltd.** Chorley Business & Technology centre, Euxton Lane, Chorley, Lancs PR7 6TE - 01257 230220 - www.kemtex.co.uk (for Procion MX dyes, Manutex, Soda Ash, Ludigol, Urea, Synthrapol / Metapex 38 etc)
- **Fibrecrafts**, Old Portsmouth Road, Peasmarsh, Guildford, Surrey GU3 1LZ - 01483 565807 - www.fibrecrafts.com (for Procion MX dyes etc, Speedball inks, Pebeo Setacolor and other paints, Jacquard Discharge Paste, Fibre-Etch etc)
- **Art Van Go**, The Studios, 1 Stevenage Road, Knebworth, Herts G3 6AN - 01438 814946 - www.artvango.co.uk (for some of the above plus Jacquard Professional Quality Screen Printing Inks and also for metal leaf, transfer leaf, glues etc)

www.thermofaxscreens.co.uk

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